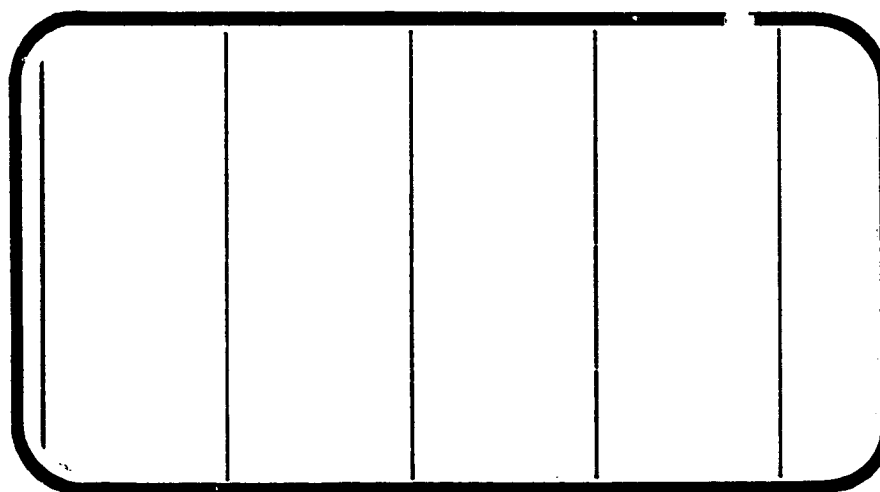




NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NASA CR-

141526



(NASA-CR-141526) SPACE SHUTTLE VEHICLE
FERRY CONFIGURATION AFTERBODY FAIRING
EFFECTS ON 140A/B ORBITER AERODYNAMIC
CHARACTERISTICS USING AN .0405 SCALE MODEL
ORBITER (43-0) IN THE ROCKWELL INTERNATIONAL G3/18

N75-21348

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20085

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANAGEMENT services

SPACE DIVISION



CHRYSLER
CORPORATION

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SPACE SHUTTLE VEHICLE FERRY
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EFFECTS ON 140A/B ORBITER
AERODYNAMIC CHARACTERISTICS USING
AN .0405-SCALE MODEL ORBITER (43-0)
IN THE ROCKWELL INTERNATIONAL
7.75 x 11 FT LOW SPEED WIND TUNNEL (0A123)

By

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Prepared under NASA Contract Number NAS9-13247

By

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for

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Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number: NAAL 731
NASA Series Number: OA123
Model Number: 43-0
Test Dates: 9 September through 11 September 1974
Occupancy Hours: 47

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Chrysler Corporation Space Division assumes no responsibility for the data presented other than display characteristics.

SPACE SHUTTLE VEHICLE FERRY
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ABSTRACT

Experimental aerodynamic investigations were conducted on a dual strut mounted .0405-scale representation of the 140A/B outer mold line Space Shuttle Orbiter in the Rockwell International 7.75 x 11.00 foot low speed wind tunnel during the time period from 9 to 11 September 1974. NASA designation for this test period was 0A123.

The primary test objectives were to define ferry configuration afterbody fairing effects on Orbiter stability and control characteristics and to substantiate wind tunnel results obtained at the Boeing Aerospace Company. Parametric variations consisted entirely of testing different afterbody fairing contours in an effort to improve both the Orbiter drag levels and lateral-directional control characteristics. The three afterbody contours that were tested consisted of the Boeing TC₃ beavertail, the new Rockwell-Boeing TC₄ fairing, and a modification of an existing short bumblebee fairing redesignated TC₆.

For this test period, aerodynamic force and moment data were measured in the stability axis system by the NAAL planar balance. The model was dual strut mounted from the wing tips with the center of rotation located at the main landing gear wheel axis. The nominal angle of attack range was $-2^\circ \leq \alpha \leq 18^\circ$ with yaw polars recorded over the sideslip angle range of $-20^\circ \leq \beta \leq 20^\circ$ at alpha angles of $0^\circ, 4^\circ, 8^\circ, 12^\circ$, and 16° .

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SCHEDULE OF COEFFICIENTS PLOTTED:

- A) CDF, CLF, CH, CLM, CAB, CAF, L/DF, XCP/L vs. ALPHA; CLF vs. CDF; CLF vs. CLM
- B) CYN, CBL, CY vs. BETA

NOMENCLATURE General

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
a		speed of sound; m/sec, ft/sec
C _p	CP	pressure coefficient; $(p_1 - p_\infty)/q$
M	MACH	Mach number; V/a
p		pressure; N/m ² , psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2\rho V^2$, N/m ² , psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
ψ	PSI	angle of yaw, degrees
ϕ	PHI	angle of roll, degrees
ρ		mass density; kg/m ³ , slugs/ft ³

Reference & C.G. Definitions

A _b		base area; m ² , ft ²
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
$\frac{l}{c}$ _{REF}	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m ² , ft ²
	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

SUBSCRIPTS

b	base
l	local
s	static conditions
t	total conditions
∞	free stream

NOMENCLATURE (Continued)

Body-Axis System

<u>SYMBOL</u>	<u>PLOT SYMBOL</u>	<u>DEFINITION</u>
C_N	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
C_A	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_{A_b}	CAB	base-force coefficient; $\frac{\text{base force}}{qS}$ $-A_b(P_b - P_{\infty})/qS$
C_{A_f}	CAF	forebody axial force coefficient, $C_A - C_{A_b}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS_{REF}}$
C_n	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_l	CL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$

Stability-Axis System

C_L	CL	lift coefficient; $\frac{\text{lift}}{qS}$
C_D	CD	drag coefficient; $\frac{\text{drag}}{qS}$
C_{D_b}	CDB	base-drag coefficient; $\frac{\text{base drag}}{qS}$
C_{D_f}	CDF	forebody drag coefficient; $C_D - C_{D_b}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS_{REF}}$
C_n	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_l	CSL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$
L/D	L/D	lift-to-drag ratio; C_L/C_D

NOMENCLATURE (Continued)

<u>Symbol</u>	<u>Plot Symbol</u>	<u>Description</u>
A_B		model base area, ft^2
C_{D_b}	CDB	$-\left(\frac{P_{B_i} - P_S}{q}\right) \left(\frac{A_{B_i}}{S}\right) \cos \alpha, i = 1 \rightarrow 11$
C_{D_S}		strut interference drag tare
C_{D_U}		planar balance uncorrected drag coefficient
C_{D_T}		model weight tare drag force coefficient
C_{L_f}	CLF	forebody lift coefficient
ELEV-L	ELV-L	left wing inboard and outboard elevon deflection angle, degrees
ELEV-R	ELV-R	right wing inboard and outboard elevon deflection angle, degrees
$P_{B_{1,2 \dots 11}}$		base pressure at tap locations 1...11, respectively, psia
XCP/L	XCP/L	model longitudinal center of pressure location, fraction of Orbiter body length
δ_a	AILRON	aileron deflection, degrees
δ_{BF}	BDFLAP	bodyflap deflection, degrees
δ_e	ELEVON	elevon deflection, degrees
δ_R	RUDDER	rudder deflection, degrees
δ_{SB}	SPDBRK	speed brake deflection, degrees
L/D_f	L/DF	lift-to-drag ratio - forebody; CLF/CDF

CONFIGURATION INVESTIGATED

The model provided for test period 0A123 was an .0405-scale representation of the 140A/B Space Shuttle Outer Mold Line Configuration. The basic model was the blended wing-body design utilizing a double delta wing ($75^\circ/45^\circ$ ALE), full span, dual panel elevons (unswept hingeline and 6" gaps), a centerline vertical tail with rudder and/or speed brake deflection capability, a canopy, a bodyflap, and an orbital maneuvering system (OMS pods) mounted on the aft fuselage sidewalls adjacent to the vertical tail. Provisions for mounting the 140C "short" OMS pods were also provided.

In addition to the aforementioned model components, three configurations of ferry mission afterbody fairings were tested in conjunction with the 140A/B fuselage B26. (See Dimensional Data).

For this test period the following nomenclature was used to designate the various model components:

<u>Component</u>	<u>Description</u>
B26, B50	140A/B Orbiter fuselage
C9	140A/B Orbiter canopy
E43	140A/B Orbiter dual panel elevon with 6" gaps
F8	140A/B Orbiter bodyflap
M7	140A/B Orbiter long OMS pods
M16	140C Orbiter short OMS pods
N28	140A/B and 140C Orbiter OMS pod nozzles

CONFIGURATION INVESTIGATED (Concluded)

R ₅	140A/B Orbiter "solid" panel rudder
TC ₃	Boeing "Beavertail" X ₃ afterbody fairing
TC ₄	Rockwell-Boeing X _{3B} afterbody fairing
TC ₆	Rockwell modified bumblebee afterbody fairing
V ₈	140A/B Orbiter centerline vertical tail
W ₁₁₆	140A/B Orbiter double delta wing

TEST FACILITY DESCRIPTION

North American Aerodynamics Laboratory (NAAL) 7.75 x 11-foot Wind Tunnel is a continuous flow, closed circuit, single return tunnel capable of speeds up to 200 miles per hour.

The test section is vented to atmospheric pressure and is 7.75 x 11 feet wide and 12 feet long. Power, supplied by a 1250-horsepower nacelle-mounted synchronous motor drives a 19-foot, seven-blade, laminated birch propeller. Airspeed is controlled by using a magnetic clutch to vary the degree of coupling between the motor and propeller. Turbulence is minimized by a damping screen and a honeycomb section in the settling chamber upstream from the contraction cone (ratio 7.53 to 1).

Tests may be conducted using a variety of mounting systems: single strut, double strut, sting strut, reflection plane, cable suspension, or two-dimensional wall. Aerodynamic data may be measured by a planar type external balance system or sting-mounted internal balances. An Astrodata Automatic Data Acquisition System collects, multiplexes, digitizes, and records on magnetic tape 50 channels of force and/or pressure data. Data are then reduced and plotted using automatic data processing equipment and an automatic digital plotter.

The NAAL wind Tunnel has been operating since June 1943. Calibrations are available over a wide range of test conditions.

DATA REDUCTION

The aerodynamic force and moment data presented in the report were measured by the NAAL external planar balance. The data have been corrected for model blockage influence on tunnel dynamic pressure, wall interference effects on model aerodynamic characteristics, model support strut interference, and model weight tare. All aerodynamic data recorded with the ferry configuration afterbodies removed have been corrected for model base area pressure drag effects. No base drag corrections were applied to data taken on configurations with afterbodies attached.

The corrections made to axial force were accomplished in the following manner:

$$C_{D_F} = C_{D_U} - C_{D_B} - C_{D_S} - C_{D_T}$$

where

C_{D_U} = planar balance uncorrected drag coefficient

$$C_{D_B} = - \left(\frac{P_{B_i} - P_{\infty}}{q} \right) \left(\frac{A_{B_i}}{S} \right) \cos \alpha, \text{ 1-11}$$

C_{D_S} = strut interference drag tare coefficient

C_{D_T} = model weight tare coefficient

All other aforementioned corrections to the aerodynamic data were applied utilizing standard low speed wind tunnel methods.

The following reference dimensions and constants were used for reducing all aerodynamic data to coefficient form:

DATA REDUCTION (Concluded)

<u>Symbol</u>	<u>Definition</u>	<u>Value</u>
A _{B1}	Area of influence, base pressure #1, ft ²	.02813
A _{B2}	Area of influence, base pressure #2, ft ²	.06614
A _{B3}	Area of influence, base pressure #3, ft ²	.08211
A _{B4}	Area of influence, base pressure #4, ft ²	.06361
A _{B5}	Area of influence, base pressure #5, ft ²	.05157
A _{B6}	Area of influence, base pressure #6, ft ²	.03435
A _{B7}	Area of influence, base pressure #7, ft ²	.04583
A _{B8}	Area of influence, base pressure #8, ft ²	.04282
A _{B9}	Area of influence, base pressure #9, ft ²	.06601
A _{B10}	Area of influence, base pressure #10, ft ²	.07014
A _{B11}	Area of influence, base pressure #11, ft ²	.14028
S	Area of wing, ft ²	4.4120
XMRP	Center of gravity, fus. sta., in.	43.5974
ZMRP	Center of gravity, waterplane, in.	15.1875
LB	Length Orbiter fuselage, in	52.2570
² 'LREF)	Wing MAC, in.	19.2300
b(BREF)	Wing span, in.	37.9360

1

$$A(f) = -20, -15, -10, -5, -2\frac{1}{2}, 0, 2\frac{1}{2}, 5, 10, 15, 20$$

TABLE II. - Concluded.

DATE: 10/10/74

TEST: DA123

NAAL 731

DATE: 10/10/74

DATA SET/RUN NUMBER COLLATION SUMMARY

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES						NO. OF RUNS	MACH NUMBERS
		A	B	CL	CAF	CSB	CR				
0201	①+M ₁₆ N ₂₀ F ₈ X ₉	A	D	0	7.7	0	0	1	26		
022		0	F						21		
023		4							22		
024		8							23		
025		12							24		
026		16							25		
027	①+M ₁₆ T ₄ X ₉	A	0		-				26		
028		0	F						27		
029		4							28		
030		8							29		
031		12							30		
032		16							31		
036	①+M ₁₆ T ₆ X ₉	A	0						32		
037		0	F						36		
038		4							37		
039		8							38		
040		12							39		
041		16							40		
									41		

CLCAFCMCYNCYICP/LKABMACHALPHA1.0

BETAα OR βSCHEDULESΔ(A) = -2° → +18° Δα = 2°
Δ(B) = 0 → +16° Δα = 4°
① B26C9 W116E43V8RS
② B50C9 W116E43V8RS

75.76676155494337312519137

TABLE III (MODEL DIMENSIONAL DATA)

MODEL COMPONENT : BODY - B26

GENERAL DESCRIPTION : Configuration 140A/B orbiter fuselage.

MODEL SCALE: 0.0405

DRAWING NUMBER : VL70-000193, VL70-000140A

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (Body nose @ $X_0=238.0$), In.	<u>1290.3</u>	<u>52.257</u>
Max Width ($X_0 = 1528.3$), In.	<u>264.0</u>	<u>10.692</u>
Max Depth ($X_0 = 1464.0$), In.	<u>250.0</u>	<u>10.125</u>
Fineness Ratio	<u>4.925</u>	<u>4.925</u>
Area - Ft ²	<u> </u>	<u> </u>
Max. Cross-Sectional	<u>340.88</u>	<u>0.559</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III (CONT'D)

MODEL COMPONENT : BODY - B₅₀GENERAL DESCRIPTION : Orbiter fuselage configuration 140A/B with the simulated MPS nozzles.MODEL SCALE: 0.0405DRAWING NUMBER : VI70-000140A/B

DIMENSIONS :

FULL SCALE

MODEL SCALE

Length (Body nose @ $X_0=238.0$), In.	<u>1290.3</u>	<u>52.257</u>
Max Width (@ $X_0 = 1528.3$), In.	<u>264.0</u>	<u>10.692</u>
Max Depth (@ $X_0 = 1464.0$), In.	<u>250.0</u>	<u>10.125</u>
Fineness Ratio	<u>4.925</u>	<u>4.925</u>
Area - Ft. ²	<u> </u>	<u> </u>
Max. Cross-Sectional	<u>340.88</u>	<u>0.559</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III (CONT'D)

MODEL COMPONENT : CANOPY - C₉

GENERAL DESCRIPTION : Configuration 140A 'R orbiter canopy con-
figuration used with fuselage B₂₆.

MODEL SCALE: 0.0405

DRAWING NUMBER : VL70-000143A VL70-000140A

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length ($X_0 = 434.64$ to 578.0), In.	<u>143.36</u>	<u>5.806</u>
Max Width (@ $X_0 = 513.13$), In.	<u>152.41</u>	<u>6.173</u>
Max Depth (@ $X = 485.00$), In.	<u>25.00</u>	<u>1.013</u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III (CONT'D)

MODEL COMPONENT: ELEVON - E₄₃GENERAL DESCRIPTION: Configuration 14OA' dual panel elevon with 6"
elevon/elevon and elevon/fuselage gaps.MODEL SCALE: 0.0405DRAWING NUMBER: VL70-00014OA/B

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area - Ft ²	<u>210.00</u>	<u>0.344</u>
Span (equivalent). In.	<u>349.20</u>	<u>14.143</u>
Inb'd equivalent chord, In.	<u>118.00</u>	<u>4.779</u>
Outb'd equivalent chord	<u>55.19</u>	<u>2.235</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.210</u>	<u>0.210</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>0.0</u>	<u>0.0</u>
Tailing Edge	<u>- 10.056</u>	<u>-10.056</u>
Hingeline	<u>0.0</u>	<u>0.0</u>
(Product of area and \bar{c})		
Area Moment (Normal to hingeline) , Ft ³	<u>1587.25</u>	<u>0.1054</u>
Mean aerodynamic chord, In.	<u>90.70</u>	<u>3.673</u>

TABLE III (CONT'D)

MODEL COMPONENT : BODY FLAP - FgGENERAL DESCRIPTION : Configuration 140A/B orbiter body flap.Hingeline located at $X_0 = 1528.3$. $Z_0 = 284.3$ MODEL SCALE: 0.0405 MODEL DWG - SS-A00147, RELEASE 12DRAWING NUMBER VL70-000140A. VL70-000145

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length ($X_0=1520$ to $X_0=1613$), In.	<u>93.00</u>	<u>3.767</u>
Max Width (In.)	<u>262.00</u>	<u>10.611</u>
Max Depth ($X_0 = 1520$, In.)	<u>23.00</u>	<u>0.932</u>
Fineness Ratio	<u> </u>	<u> </u>
Area - Ft. ²	<u> </u>	<u> </u>
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u>150.525</u>	<u>0.247</u>
Wetted	<u> </u>	<u> </u>
Base	<u>41.847</u>	<u>0.0686</u>

TABLE III (CONT'D)

MODEL COMPONENT : ORBITAL MANEUVERING SYSTEM - M₇

GENERAL DESCRIPTION : 140A 'B configuration orbiter OMS/RCS pods

MODEL SCALE: 0.0405 MODEL DWG: 3S-A00147, Release 12

DRAWING NUMBER : VL70-000145

DIMENSIONS	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta. $X_0=1233.0$). In.	<u>327.000</u>	<u>13.244</u>
Max Width (@ $X_0 = 1450.0$). In.	<u>94.5</u>	<u>3.827</u>
Max Depth (@ $X_0 = 1493.0$). In.	<u>109.000</u>	<u>4.415</u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III (CONT'D)

MODEL COMPONENT : ORBITAL MANEUVERING SYSTEM - M₁₆GENERAL DESCRIPTION : Configuration 140C orbiter OMS pod - short
pod.MODEL SCALE: 0.0405DRAWING NUMBER : VI70-008401, VI70-008410

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta $X_0 = 1310.5$). In.	<u>258.50</u>	<u>10.469</u>
Max Width (@ $X_0 = 1511$). In.	<u>136.8</u>	<u>5.540</u>
Max Depth (@ $X = 1511$). In.	<u>74.70</u>	<u>3.025</u>
Fineness Ratio	<u>2.484</u>	<u>2.484</u>
Area - Ft. ²	<u> </u>	<u> </u>
Max. Cross-Sectional	<u>58.864</u>	<u>0.097</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III (CONT'D)

MODEL COMPONENT: OMS NOZZLES - N₂GENERAL DESCRIPTION: Configuration 140A/B Orbiter OMS NozzlesMODEL SCALE: 0.0405DRAWING NUMBER: VL70-000140A (Location), SS-A00106, Rel. 5 (Contour)

DIMENSIONS:		<u>FULL SCALE</u>	<u>MODEL SCALE</u>
MACH NO.			
Length - In.			
Gimbal Point to Exit Plane			
Throat to Exit Plane			
Diameter - In.			
Exit			
Throat			
Inlet			
Area - ft ²			
Exit			
Throat			
Gimbal Point (Station) - In.			
Left Upper Nozzle			
X _o		<u>1518.0</u>	<u>61.479</u>
Y _o		<u>- 88.0</u>	<u>- 3.564</u>
Z _o		<u>492.0</u>	<u>19.926</u>
Right Lower Nozzles			
X _o		<u>1518.0</u>	<u>61.479</u>
Y _o		<u>88.0</u>	<u>3.564</u>
Z _o		<u>492.0</u>	<u>19.926</u>
Null Position - Deg.			
Left Upper Nozzle			
Pitch	15° 49'	<u>+ 8</u>	13° 17' OUTB'D
Yaw	12° 17' (OUTB'D)	<u>+ 8</u>	2° 30' INB'D
Lower Nozzle			
Pitch			13° 17' OUT'D
Yaw			2° 17' INB'D

TABLE III (CONT'D)

MODEL COMPONENT: RUDDER - P₅GENERAL DESCRIPTION: Configuration 140C orbiter rudder (identical to configuration 140A 'B' rudder)MODEL SCALE: 0.0405DRAWING NUMBER: VL70-000146B VL70-000095

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area - Ft. ²	<u>100.15</u>	<u>0.164</u>
Span (equivalent), In.	<u>201.00</u>	<u>8.141</u>
Inb'd equivalent chord, In.	<u>91.585</u>	<u>3.709</u>
Outb'd equivalent chord, In.	<u>50.833</u>	<u>2.059</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>34.83</u>	<u>34.83</u>
Tailing Edge	<u>26.25</u>	<u>26.25</u>
Hingeline	<u>34.83</u>	<u>34.83</u>
Area Moment (Product of area and \bar{c}) (Normal to hingeline), Ft. ³	<u>610.92</u>	<u>0.0406</u>
Mean Aerodynamic Chord, In.	<u>73.20</u>	<u>2.965</u>

TABLE III (CONT'D)

MODEL COMPONENT: VERTICAL - V₈GENERAL DESCRIPTION: Configuration 140C orbiter vertical tail (identical to configuration 140A 'B vertical tail)MODEL SCALE: 0.0405DRAWING NUMBER: VL70-000140C, VL70-000146B

DIMENSIONS:

	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
TOTAL DATA		
Area (Theo) - Ft ²		
Planform	<u>413.253</u>	<u>0.678</u>
Span (Theo) - In.	<u>315.72</u>	<u>12.787</u>
Aspect Ratio	<u>1.675</u>	<u>1.675</u>
Rate of Taper	<u>0.507</u>	<u>0.507</u>
Taper Ratio	<u>0.404</u>	<u>0.404</u>
Sweep-Back Angles, Degrees.		
Leading Edge	<u>45.000</u>	<u>45.000</u>
Trailing Edge	<u>26.25</u>	<u>26.25</u>
0.25 Element Line	<u>41.13</u>	<u>41.13</u>
Chords: - In.		
Root (Theo) WP	<u>268.50</u>	<u>10.874</u>
Tip (Theo) WP	<u>108.47</u>	<u>4.393</u>
M.C	<u>199.81</u>	<u>8.093</u>
Fus. Sta. of .25 MAC	<u>1463.35</u>	<u>59.272</u>
W.P. of .25 MAC	<u>635.52</u>	<u>25.738</u>
B.L. of .25 MAC	<u>0.00</u>	<u>0.00</u>
Airfoil Section		
Leading Wedge Angle - Deg.	<u>10.00</u>	<u>10.00</u>
Trailing Wedge Angle - Deg.	<u>14.92</u>	<u>14.92</u>
Leading Edge Radius	<u>2.00</u>	<u>0.081</u>
Void Area	<u>13.17</u>	<u>0.022</u>
Blanketed Area	<u>0.00</u>	<u>0.00</u>

TABLE III (CONT'D)

MODEL COMPONENT: WING-W₁₁₆GENERAL DESCRIPTION: Configuration ANOTE: Identical to W₁₁, except airfoil thickness. Dihedral angle is along trailing edge of wing.MODEL SCALE: 0.0405

TEST NO.

DWG. NO. VL70-000140A, -000200DIMENSIONS:FULL-SCALEMODEL SCALETOTAL DATAArea (Theo.) Ft^2

Planform

Span (Theo) In.

Aspect Ratio

Rate of Taper

Taper Ratio

Dihedral Angle, degrees

Incidence Angle, degrees

Aerodynamic Twist, degrees

Sweep Back Angles, degrees

Leading Edge

Trailing Edge

0.25 Element Line

Chords: - In.

Root (Theo) B.P.O.O.

Tip, (Theo) B.P.

MAC

Fus. Sta. of .25 MAC

W.P. of .25 MAC

B.L. of .25 MAC

EXPOSED DATAArea (Theo) Ft^2

Span, (Theo) In. BP108

Aspect Ratio

Taper Ratio

Chords - In.

Root BP108

Tip $1.00 \frac{b}{2}$

MAC

Fus. Sta. of .25 MAC

W.P. of .25 MAC

B.L. of .25 MAC

Airfoil Section (Rockwell Mod NASA)
XXXX-64Root $\frac{b}{2}$ =Tip $\frac{b}{2}$ =

Data for (1) of (2) Sides

Leading Edge Cuff $\frac{2}{2}$ Planform Area Ft^2

Leading Edge Intersects Fus M. L. @ Sta

Leading Edge Intersects Wing @ Sta

TABLE III (CONT'D)

MODEL COMPONENT: TAILCONE - TC₃

GENERAL DESCRIPTION: Afterbody fairing used on body B26 for ferry configuration drag reduction. Fairing extends from body B26 trailing edge to fuselage station 1882.59. Fairing encloses OMS pods and terminates in a sharp trailing edge. Also designated as the Boeing Beavertail.

DRAWING NO.: SS-A01460

TABLE III (CONT'D)

MODEL COMPONENT: TAILCONE - TC₄

GENERAL DESCRIPTION: Afterbody fairing used on body B₂₆ for ferry configuration drag reduction. Fairing extends from body B₂₆ trailing edge to fuselage station 1900.00. Fairing encloses OMS pods and terminates in a blunt trailing edge.

DRAWING NO.: 35-A01460.

TABLE III (CONL'D)

MODEL COMPONENT: TAILCONE - TC₆

GENERAL DESCRIPTION: Afterbody fairing used on body B₂₆ for ferry configuration drag reduction. Fairing extends from body B₂₆ trailing edge to fuselage station 1805.98. Fairing does not enclose OMS pods and terminates in a rounded trailing edge. OMS pods have been contoured to provide a smooth transition between OMS pods trailing edge and afterbody fairing. Also designated as the Rockwell Bumblebee.

DRAWING NO.: SS-A01163.

Notes

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

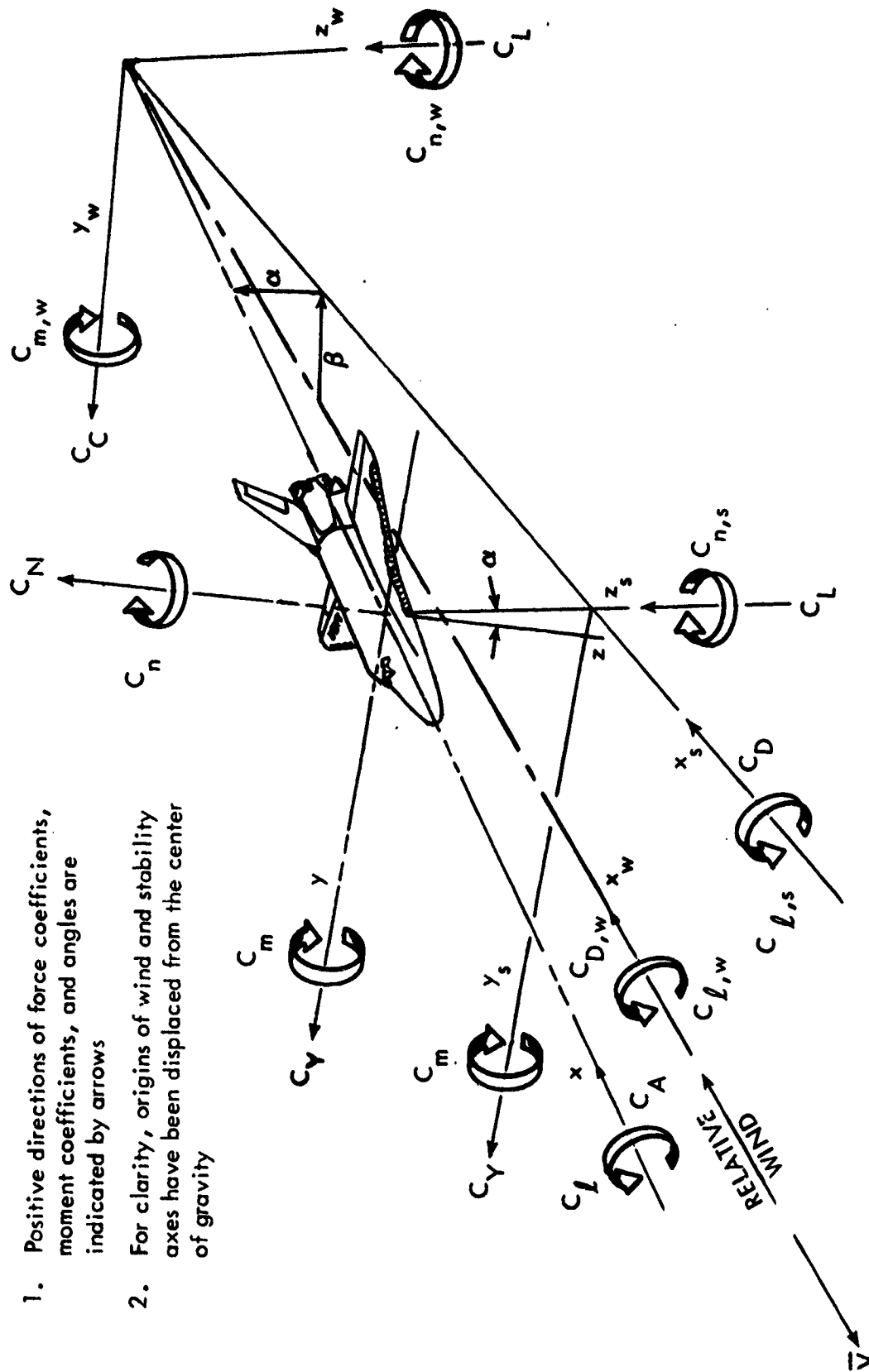
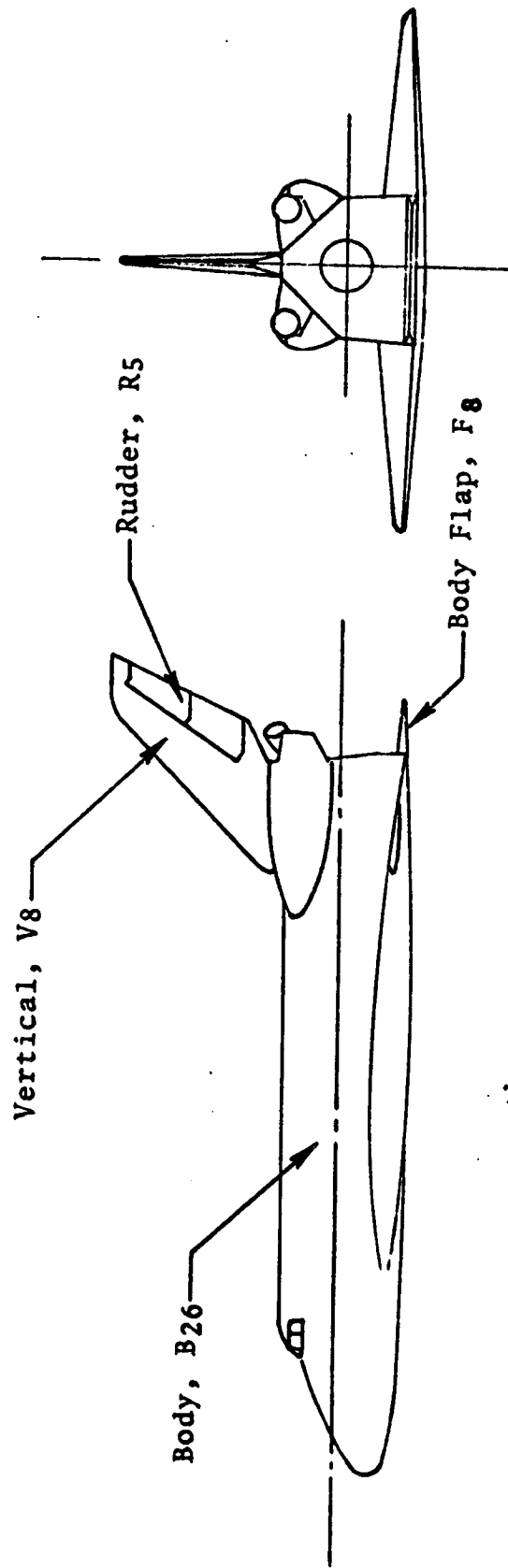
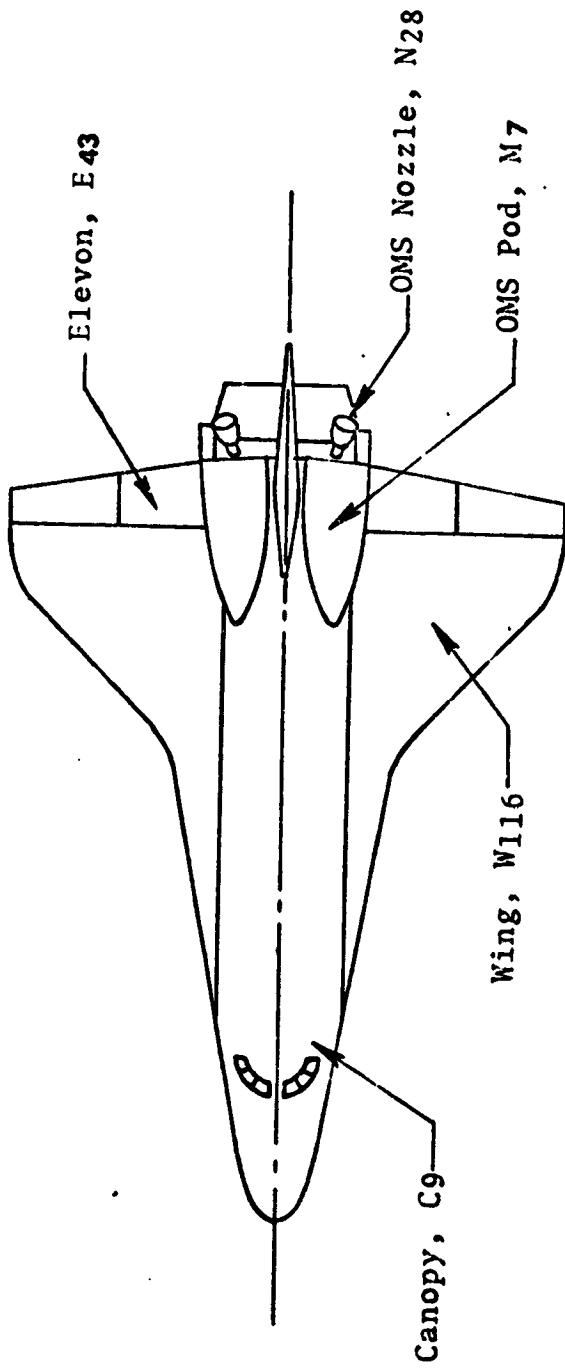
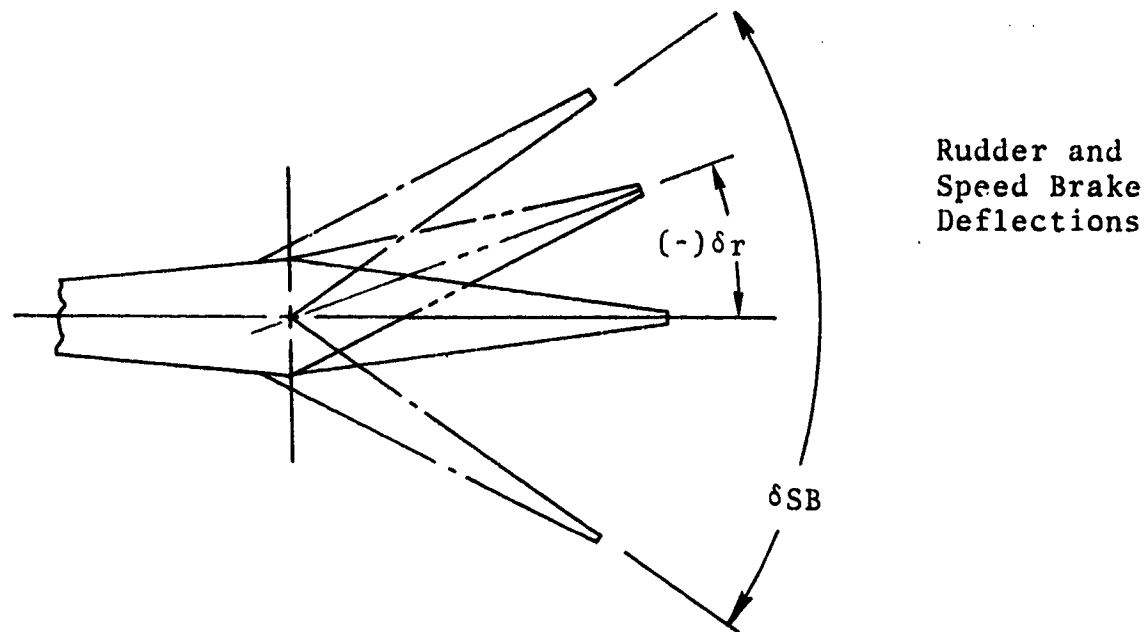


Figure 1. - Axis systems.

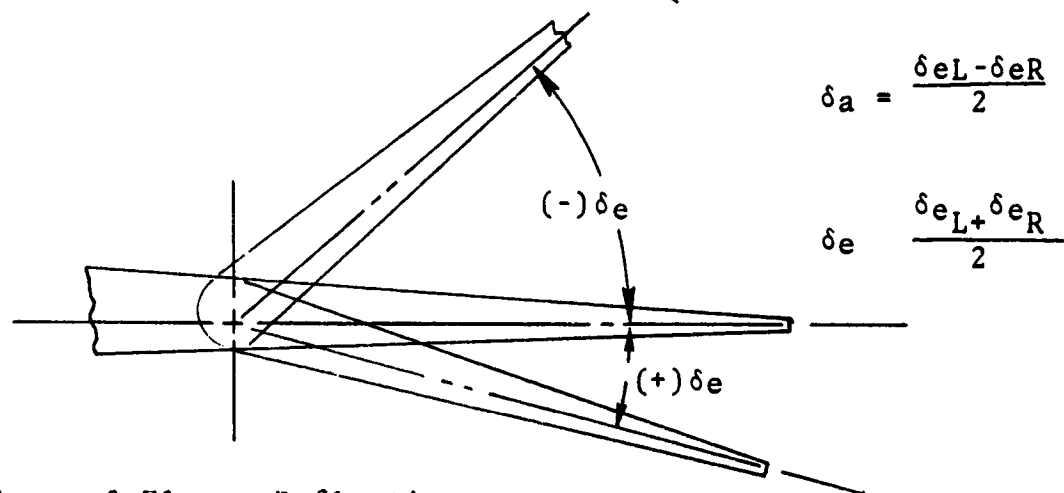


a. Orbiter Three View

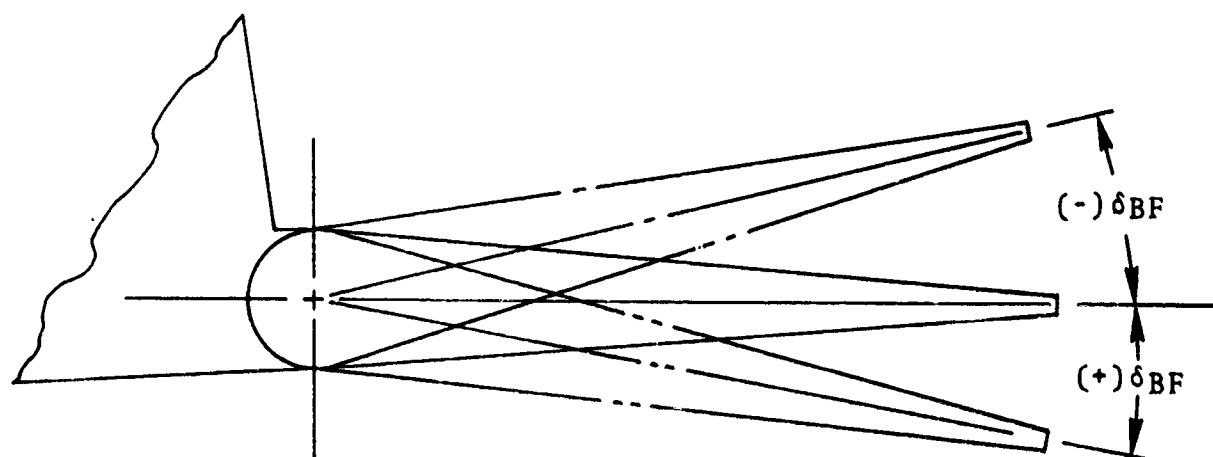
Figure 2. - Model sketches.



Rudder and
Speed Brake
Deflections



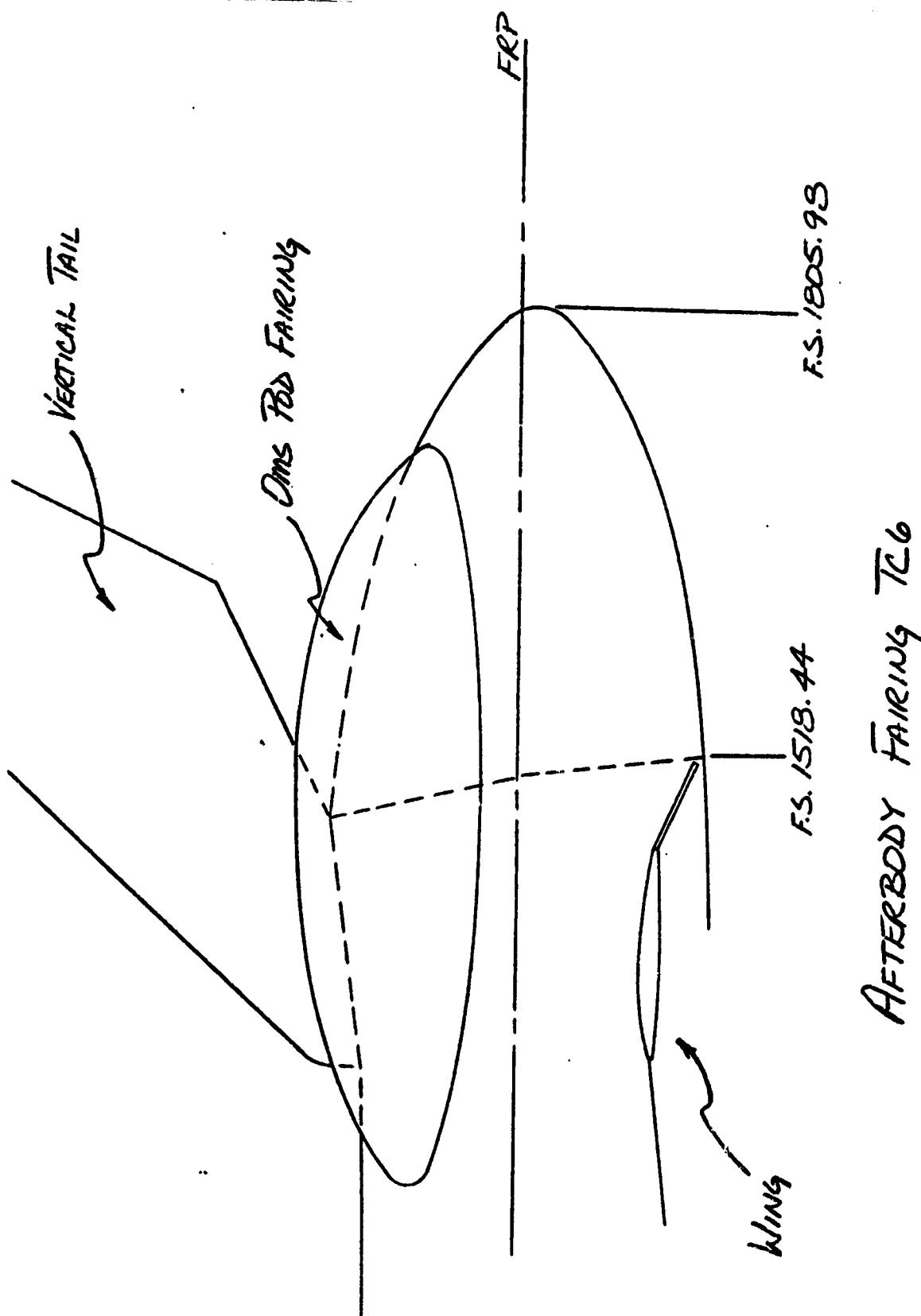
Aileron & Elevon Deflections



Body Flap Deflections

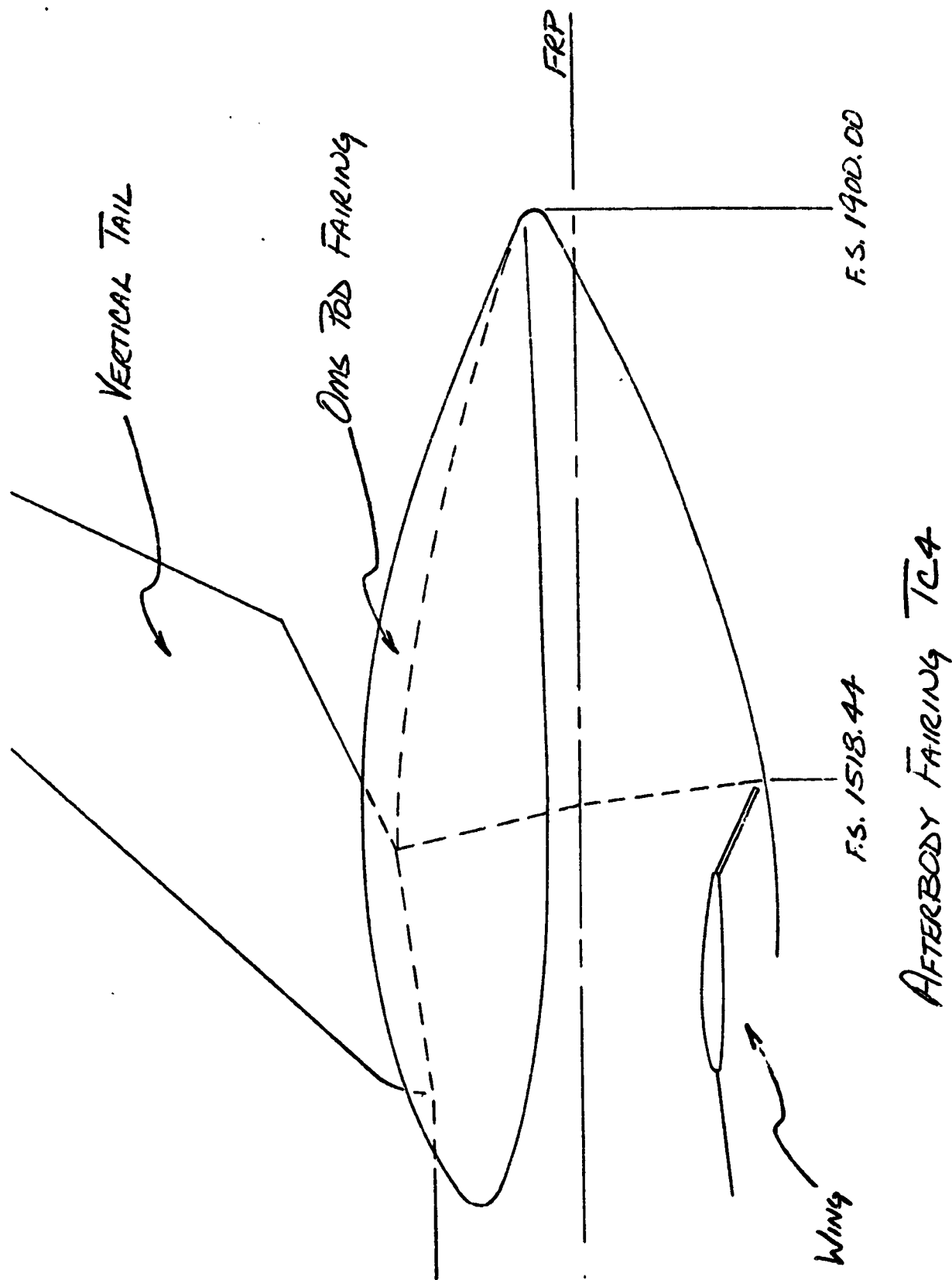
b. Sign Convention for Control Surfaces

Figure 2. - Continued.



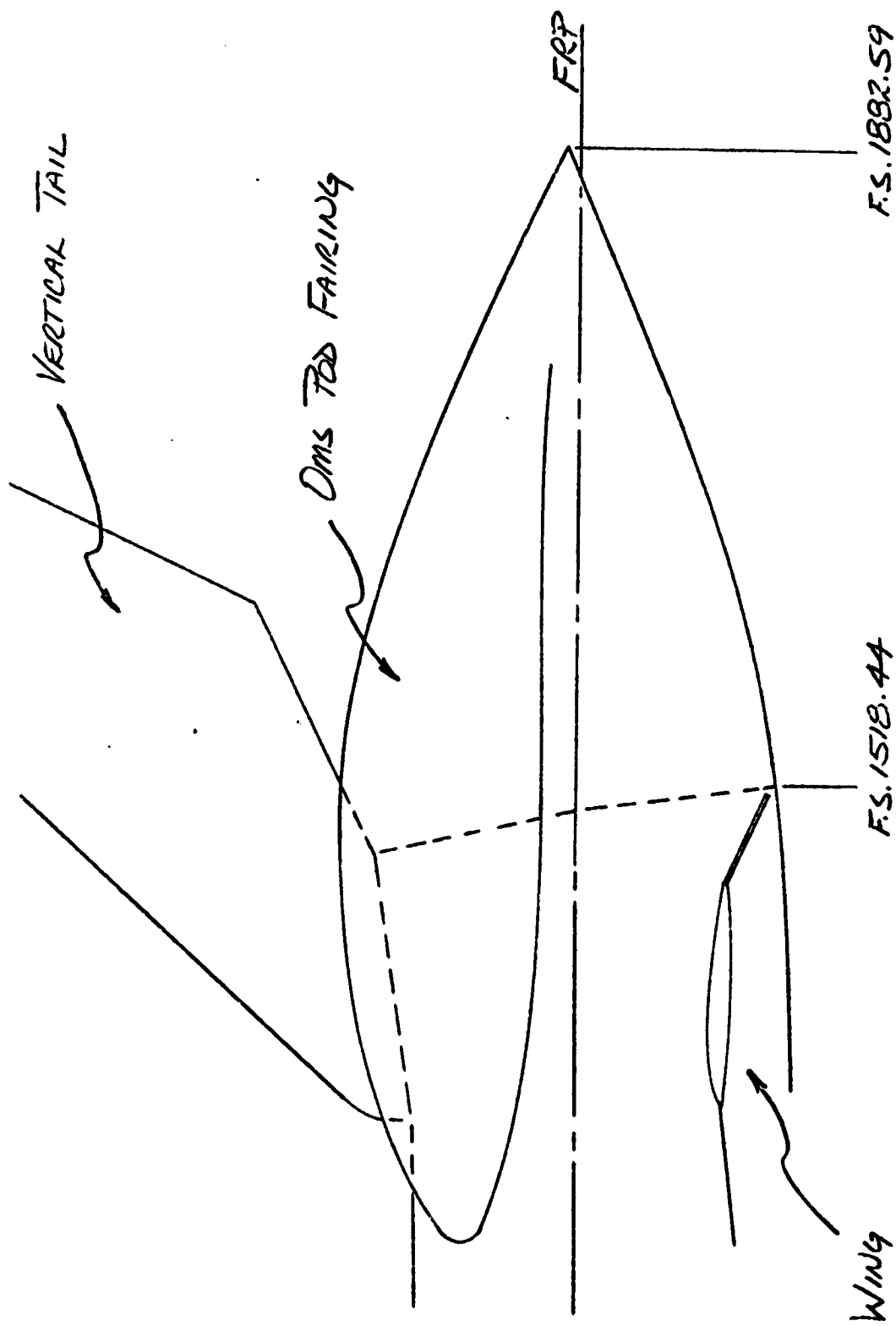
c. Afterbody Fairing TC₆

Figure 2. - Continued.



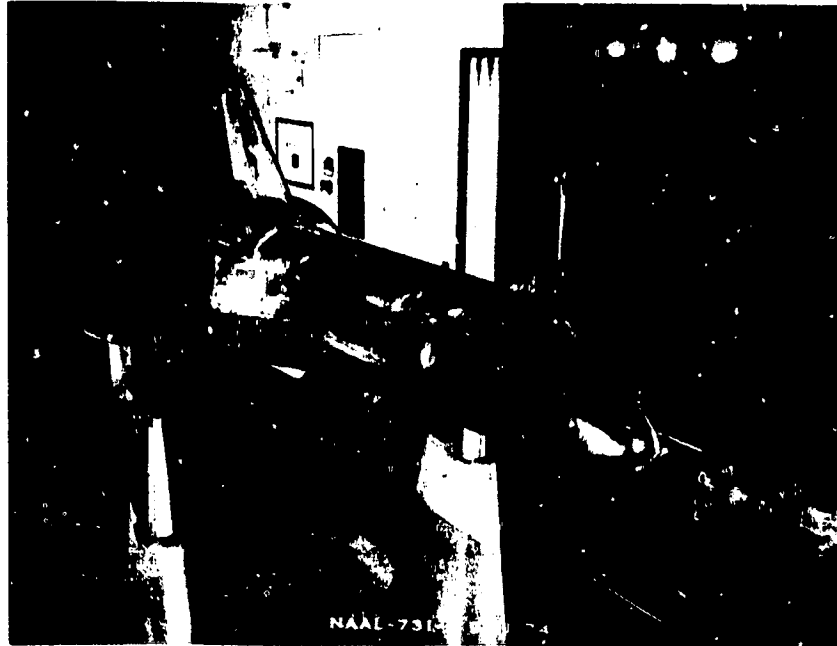
d. Afterbody Fairing TC₄

Figure 2. - Continued.

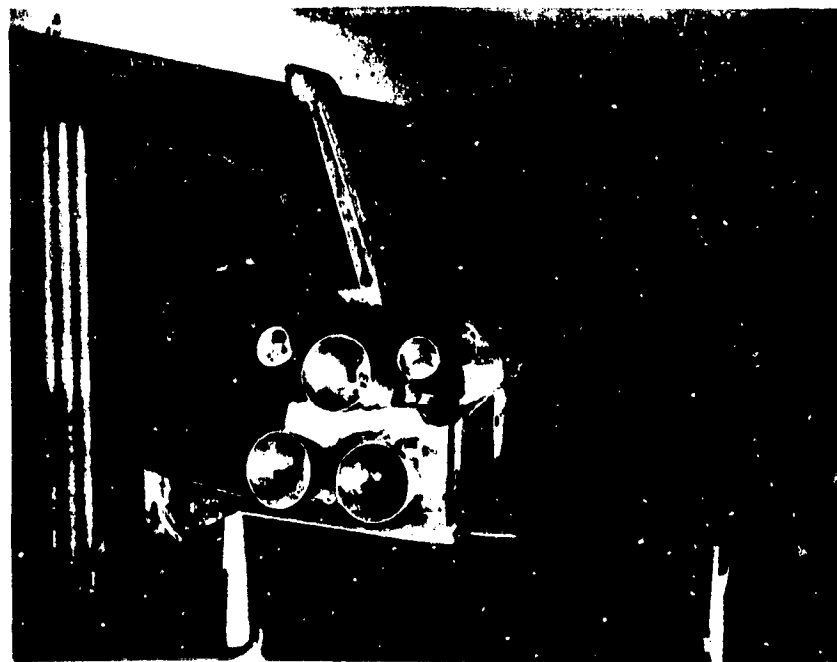


e. Afterbody Fairing TC₃

Figure 2. - Concluded.

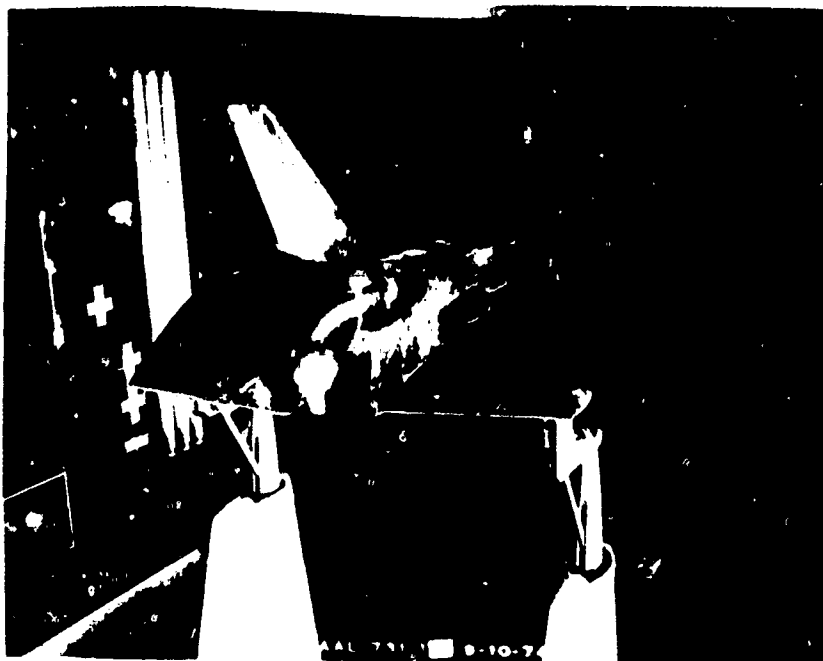


a. Front View, NAAL Dual Strut Installation,
Configuration B₂₆ C₉ M₁₆ W₁₁₆ E₄₃ V₈ R₅ TC₄ X₉

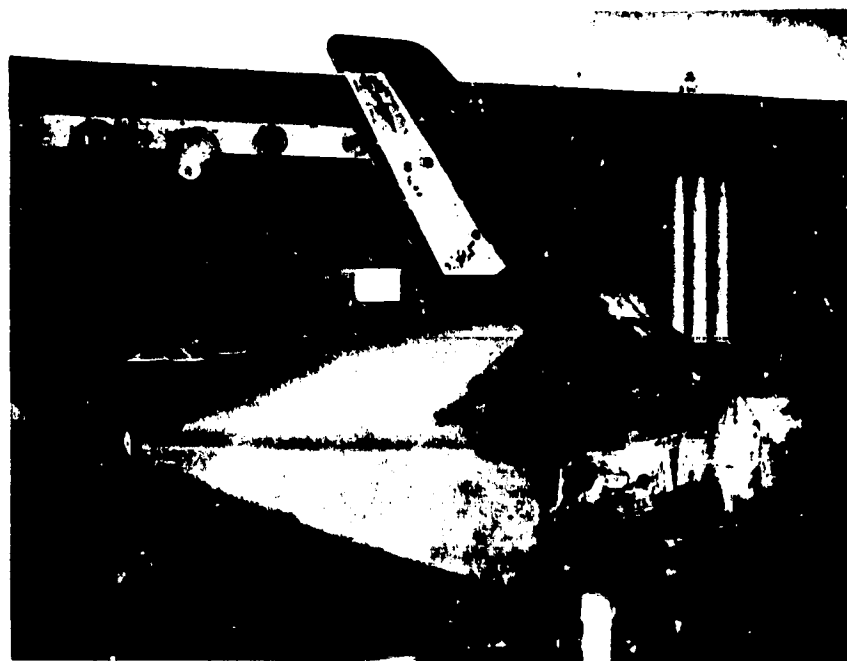


b. Rear View, NAAL Dual Strut Installation,
Configuration B₅₀ C₉ M₁₆ N₂₈ W₁₁₆ E₄₃ V₈ R₅ X₉

Figure 3. - Model photographs.

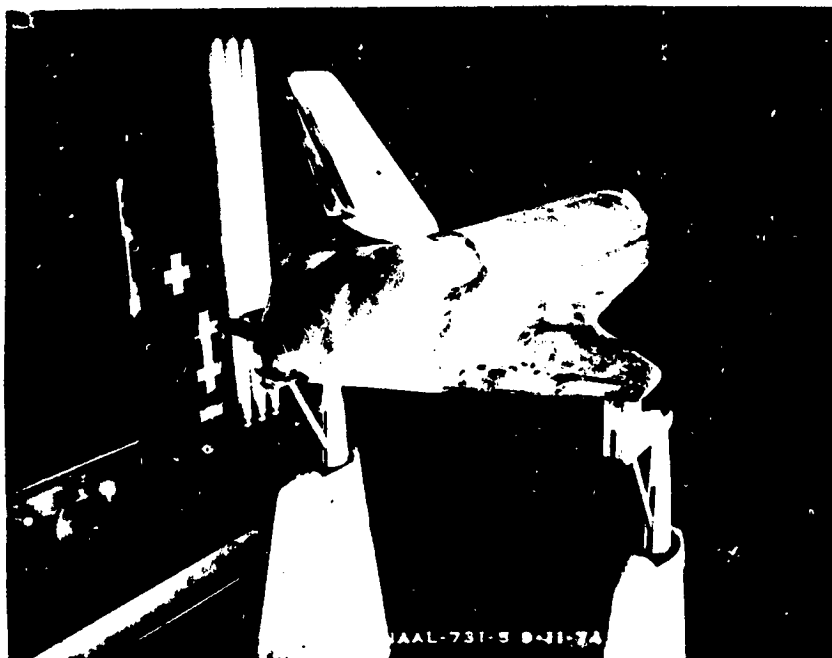


c. Rear View, NAAL Dual Strut Installation,
Configuration B₂₆ C₉ M₇ W₁₁₆ E₄₃ V₈ R₅ TC₃



d. Rear Side View, NAAL Dual Strut Installation,
Configuration B₂₆ C₉ M₁₆ W₁₁₆ E₄₃ V₈ R₅ TC₄ X₉

Figure 3. - Continued.



e. Rear View, NAAL Dual Strut Installation,
Configuration B₂₆ C₉ M₁₆ W₁₁₆ E₄₃ V₈ R₅ TC₆ X₉

Figure 3. - Concluded.

DATA FIGURES

REFERENCE INFORMATION
 SWEE .689.8300 50 FT
 LRI 474.8100 INCHES
 BRLE 936.6800 INCHES
 Y-200 1276.0000 INCHES
 Y-200 375.0000 INCHES
 SCALE .0405

ELEVON AILRON RUDDER SPOONK
 .000 .000 .000 .000
 .000 .000 .000 .000

DISCUSSION OF SCALING
 3000 3000 3000 3000
 3000 3000 3000 3000

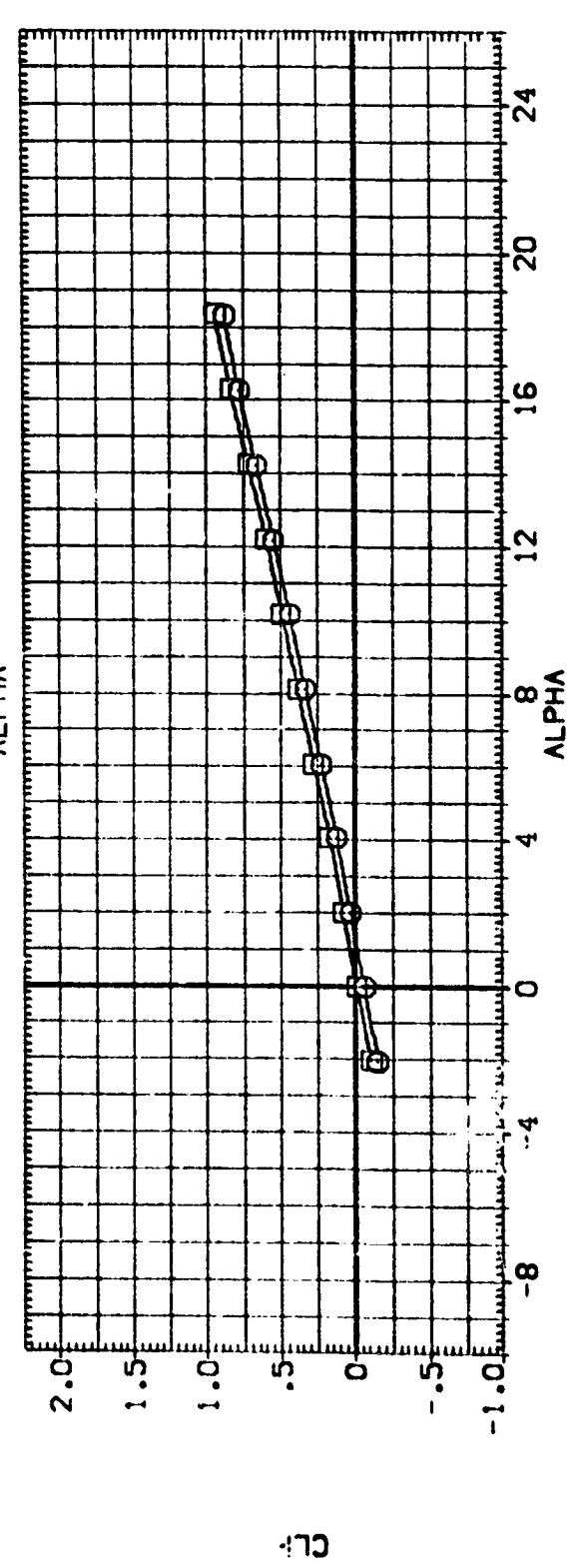
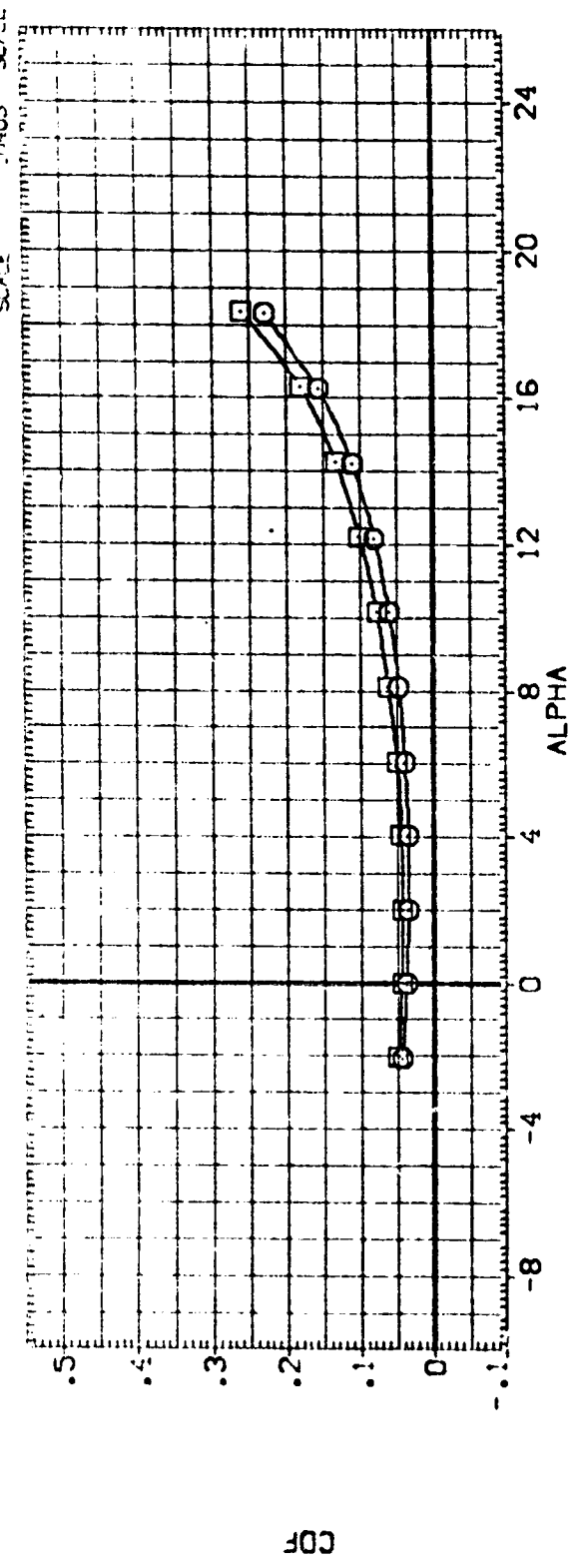


FIG 4 ORB. AFTBODY FAIRING EFF. ON LONG. CHAR. -TRAN GRIT OFF

(M)MACH = .26

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVATION	AIRLON	RUDDER	SPDBRK	REFERENCE INFORMATION
[AFAC001]	Q123 826C9 M7 N28V116E13V8R5	.000	.000	.000	.000	SREF 2689.8300 SQ.FT.
[AFAC002]	Q123 826C9 M7 N28V116E13V8R5TC3	.000	.000	.000	.000	LREF 474.3100 INCHES
						BREF 936.6800 INCHES
						XMRP 1075.6800 INCHES
						YMRP 375.0000 INCHES
						ZMRP 375.0000 INCHES
						SCALE .0405

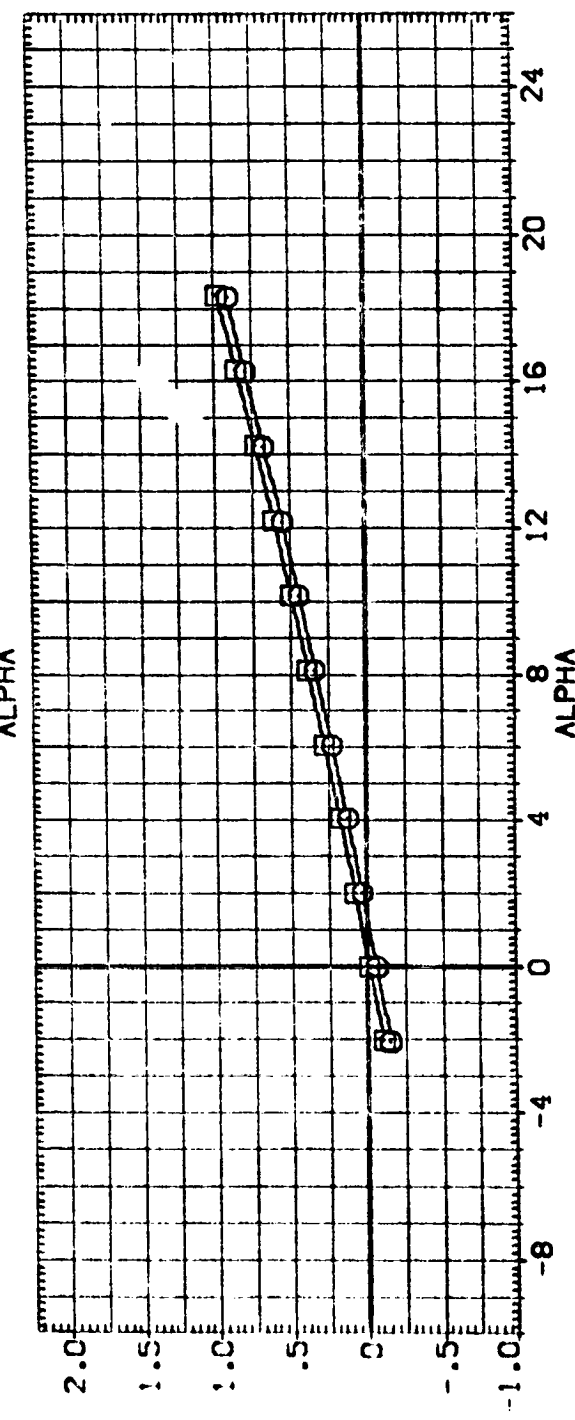
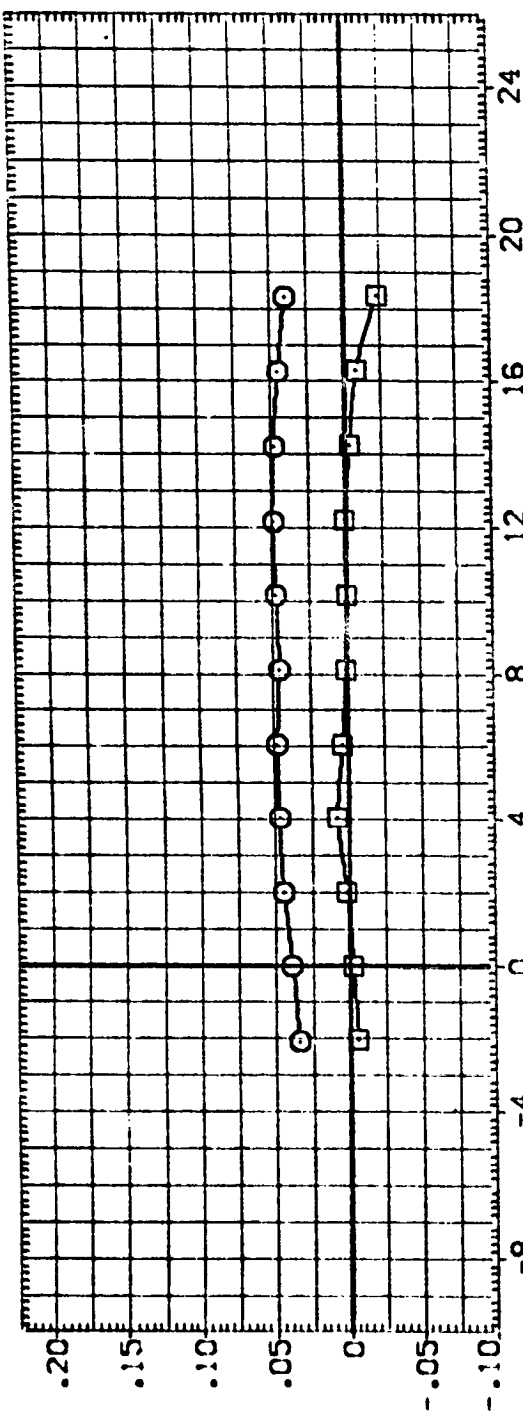


FIG 4 ORB. AFTBODY FAIRING EFF. ON LONG. CHAR. -TRAN GRIT OFF
 (A)MACH = .26

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	AILERON	RUDDER	SPDBRK	REFERENCE INFORMATION
[AFAC001]	QA123 B76C9 M7 N28V11E43V895	.000	.000	.000	.000	SREF 2689.6300 SQ.FT.
[AFAC007]	CA123 B79C9 M7 N28V11E43V895TC3	.000	.000	.000	.000	LREF 474.8100 INCHES
						BREF 936.6800 INCHES
						XMRP 1076.6800 INCHES
						YMRP .0000 INCHES
						ZMRP 375.0000 INCHES
						SCALE .0405

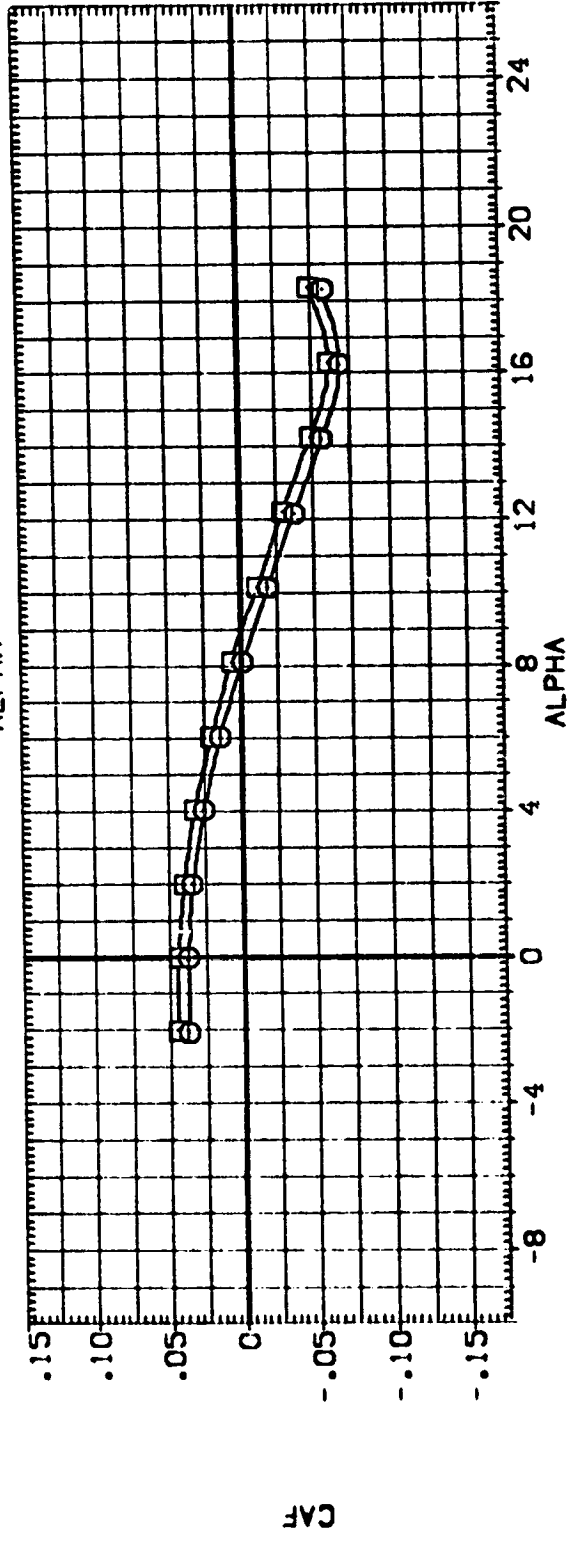
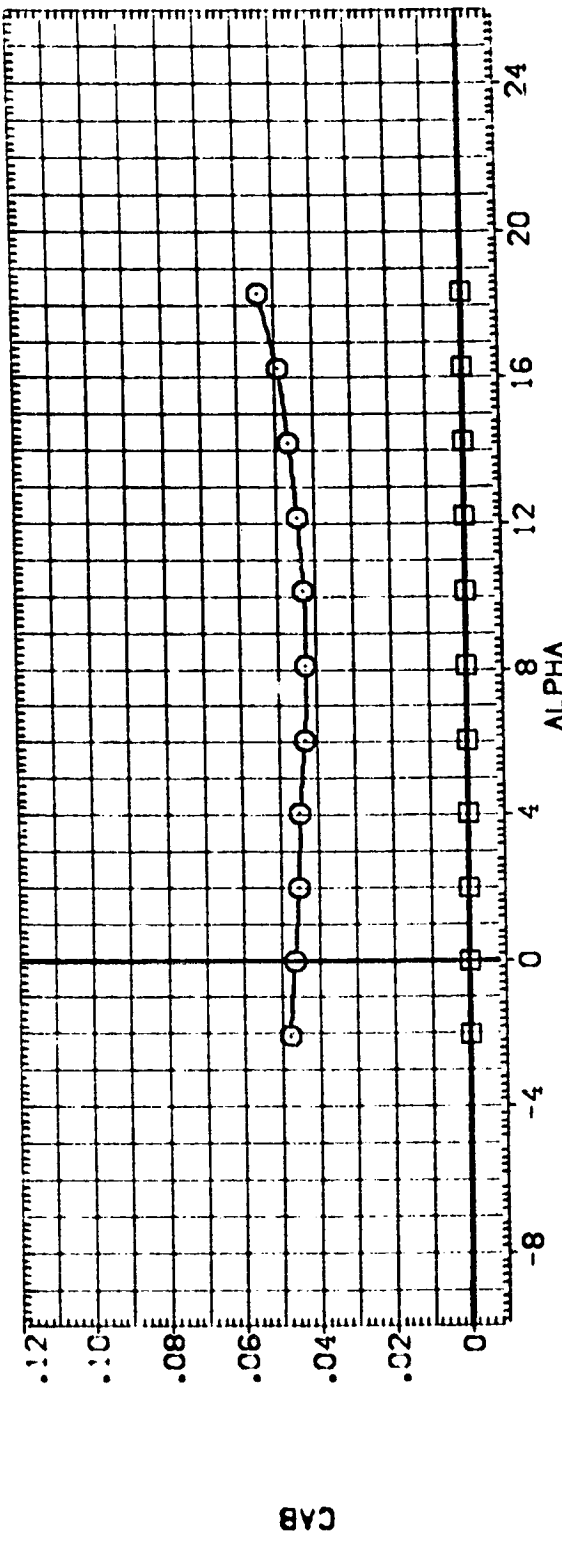


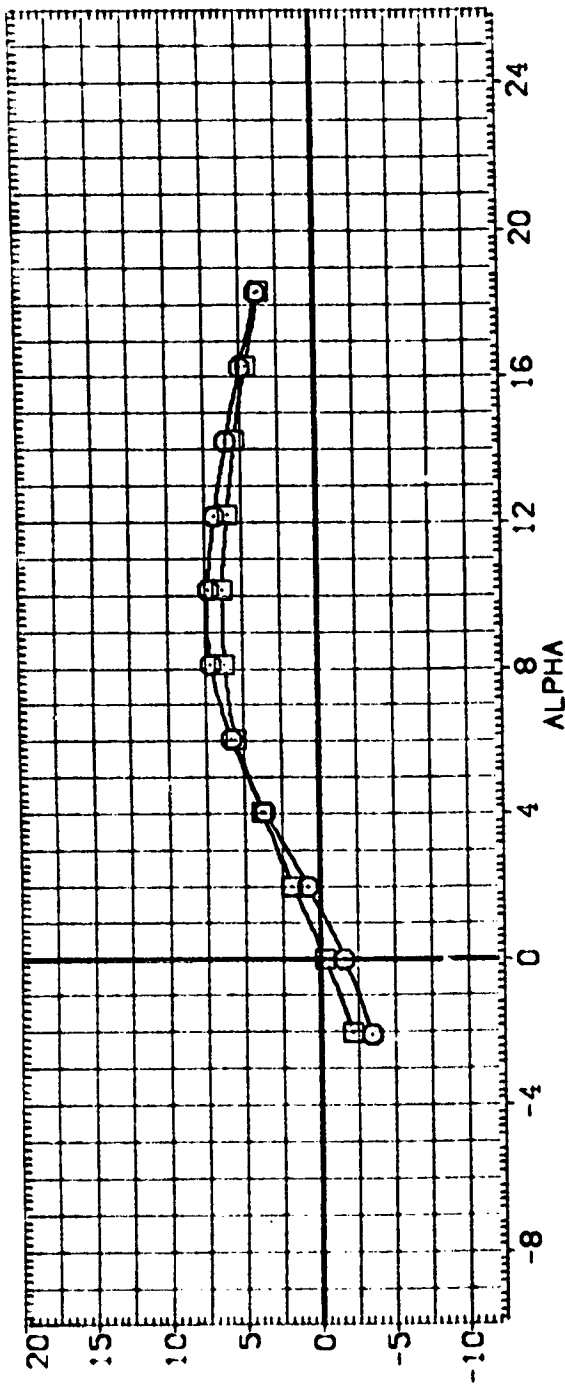
FIG 4 ORB. AFTBODY FAIRING EFF. ON LONG. CHAR. -TRAN GRIT OFF

[A]YACH = .26

DATA SET SYMBOL CONFIGURATION DESCRIPTION
 [AFAC01] Q 0A123 B26C9 M7 N28V116E43V8R5
 [AFAC07] Q 0A123 B26C9 M7 N28V116E43V8R5TC3

REFERENCE INFORMATION
 SREF 4689.8300 SCALE
 LREF 474.8100 INCHES
 BREF 936.6900 INCHES
 XMRP 1076.8900 INCHES
 YMRP .0000 INCHES
 ZMRP 375.0000 INCHES
 SCALE .0405

L/DF



XCP/L

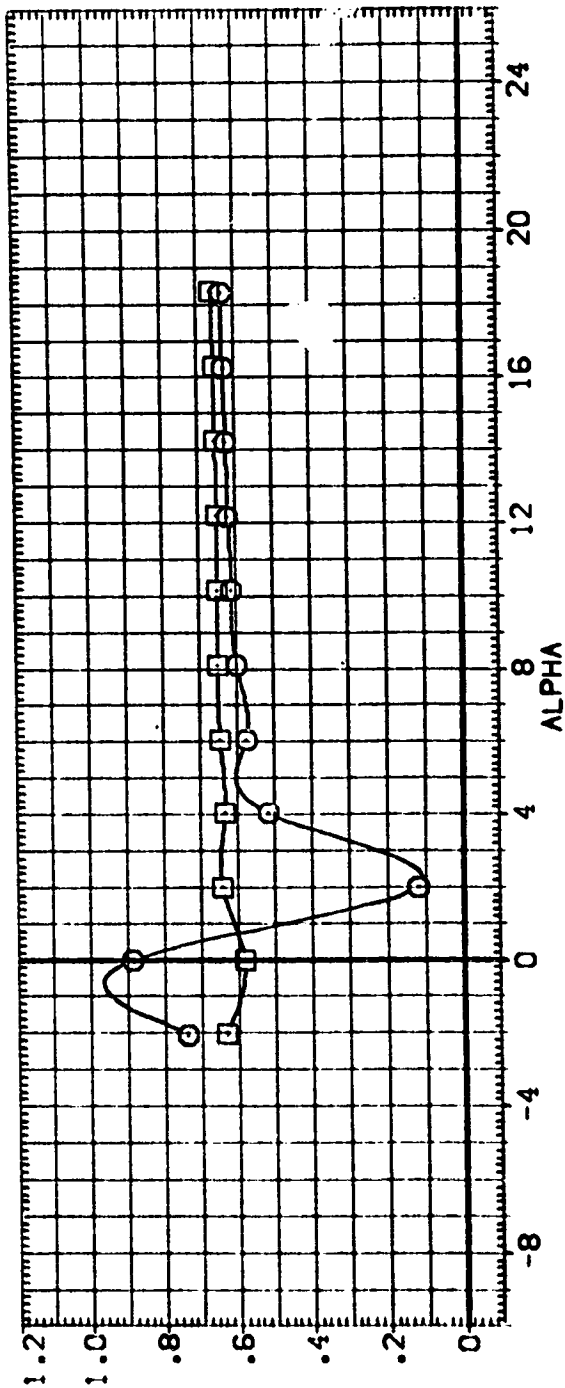


FIG 4 ORB. AFTBODY FAIRING EFF. ON LONG. CHAR. -TRAN GRIT OFF

(A) VACH = .26



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 [AFACC:] Q 0A123 B76C9 W7 N28A116E43/895
 [AFACC:] Q 0A123 B76C9 W7 N28A116E43/895TC3

ELEVON AILRON RUDDER SPOBRK
 .000 .000 .000 .000
 .000 .000 .000 .000

REFERENCE INFORMATION
 SREF 2689.8300 SQ.FT.
 LREF 474.8100 INCHES
 BREF 936.6800 INCHES
 XMRP 1076.6800 INCHES
 YMRP .0000 INCHES
 ZMRP 375.0000 INCHES
 SCALE .0405

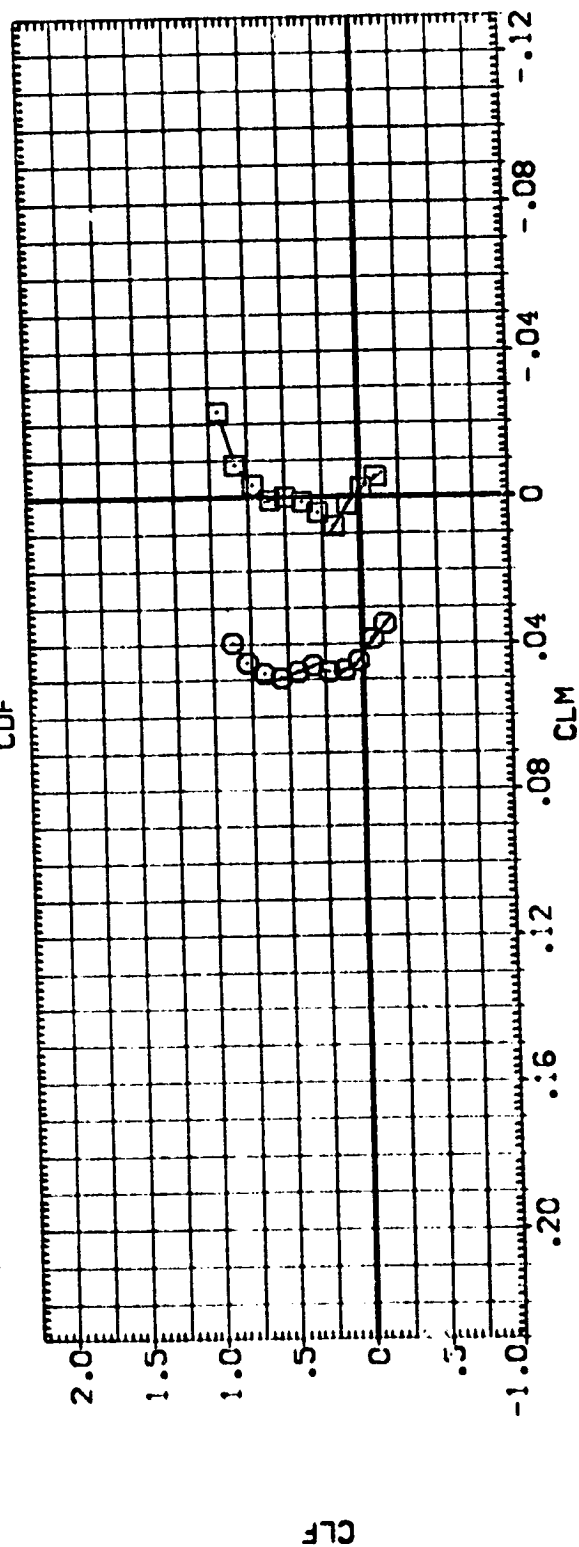
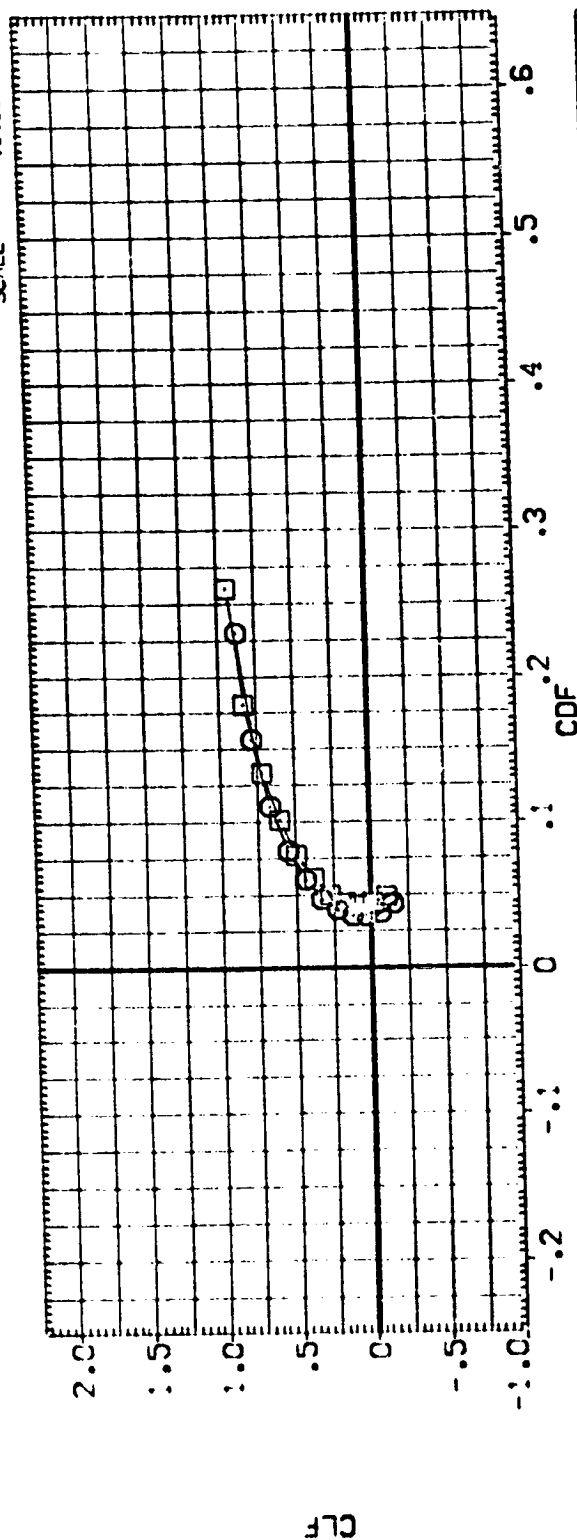


FIG 4 ORB. AFTBDY FAIRING EFF. ON LONG. CHAR. -TRAN GRIT OFF

[A]MACH = .26

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	AILERON	RUDDER	SPDRBK	REF	LE INFORMATION
[AFAC01]	0A123 B29C9B16N28V116E43V8V5 X9	.000	.000	.000	40.000	SREF	159.8300
[AFAC015]	0A123 B50C9B16N28V116E43V8V5 X9	.000	.000	.000	40.000	LRREF	174.8100
[AFAC017]	0A123 B29C9 M16 V116E43V8V5TC4X9	.000	.000	.000	40.000	BREF	936.6800
[AFAC036]	0A123 B29C9 M16 V116E43V8V5TC6X9	.000	.000	.000	40.000	XREF	1076.6800
						YREF	375.0000
						ZREF	1076.6800
						SCALE	1076.6800

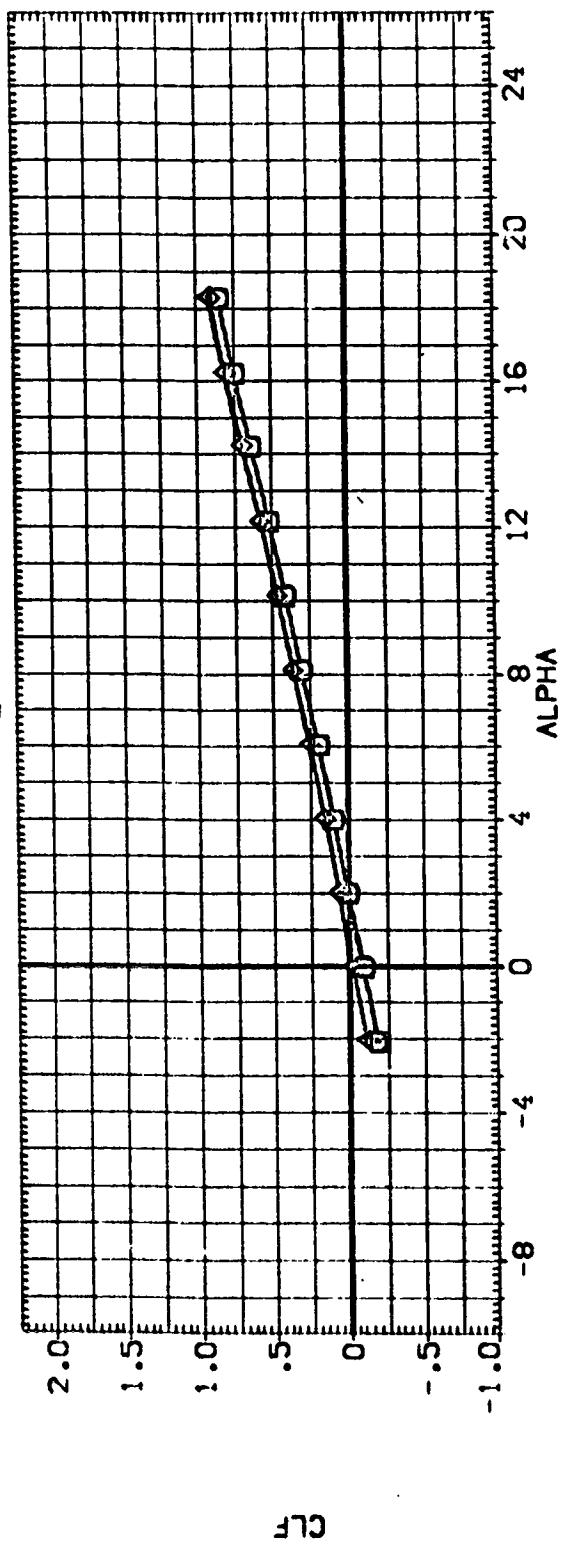
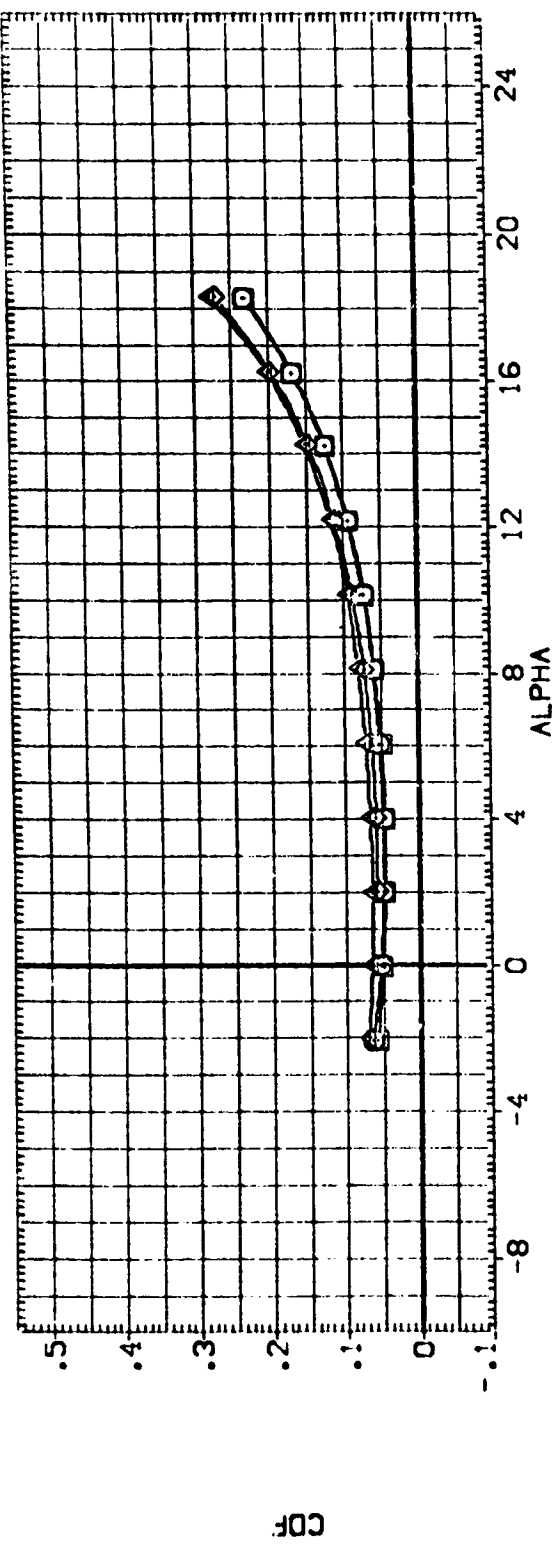


FIG 5 OR8. AFTBDY FAIRING EFF. ON LONG. CHAR. -TRAN GRIT ON
 (A)MACH = .26



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	AILERON	RUDDER	SPDRBK	REFERENCE INFORMATION
[AFA021]	Q	.000	.000	.000	40.000	SREF 2689.8300 SQ.FT.
[AFA015]	CA123	.000	.000	.000	40.000	LREF 474.8100 INCHES
[AFA017]	CA123	.000	.000	.000	40.000	BREF 936.6800 INCHES
[AFA036]	CA123	.000	.000	.000	40.000	XMRP 1076.6800 INCHES
						ZMRP 375.0000 INCHES
						SCALE .0405

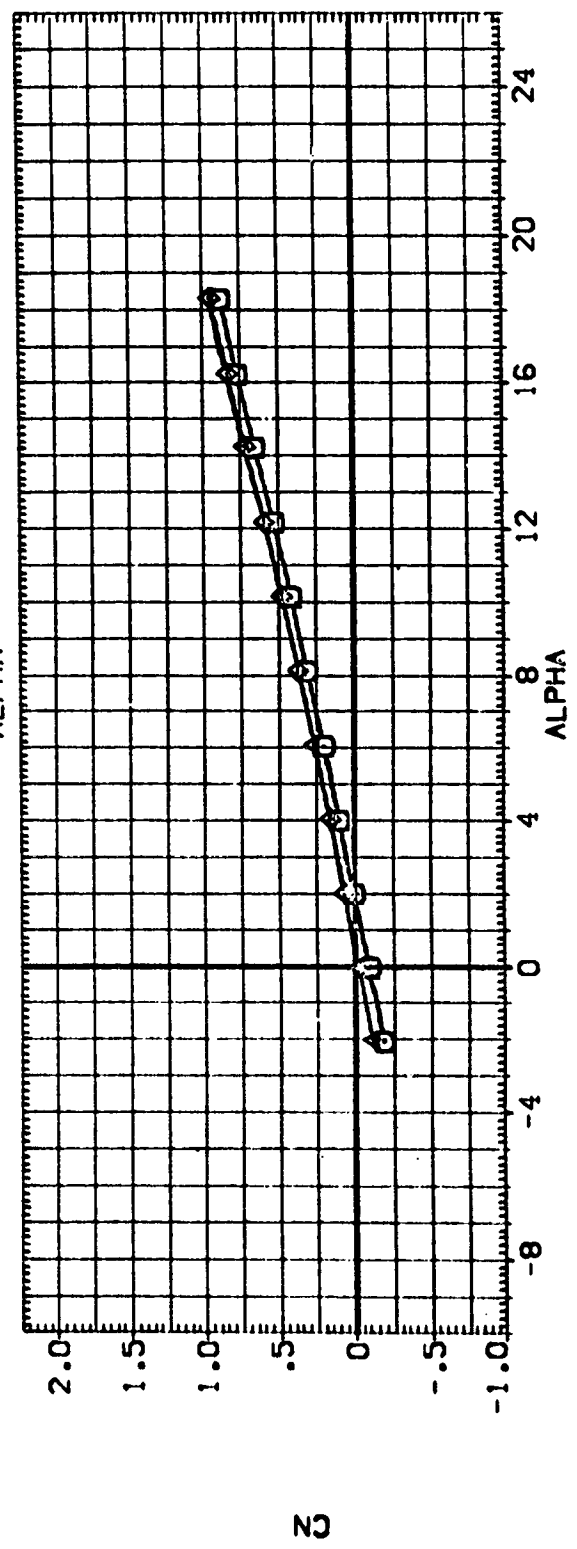
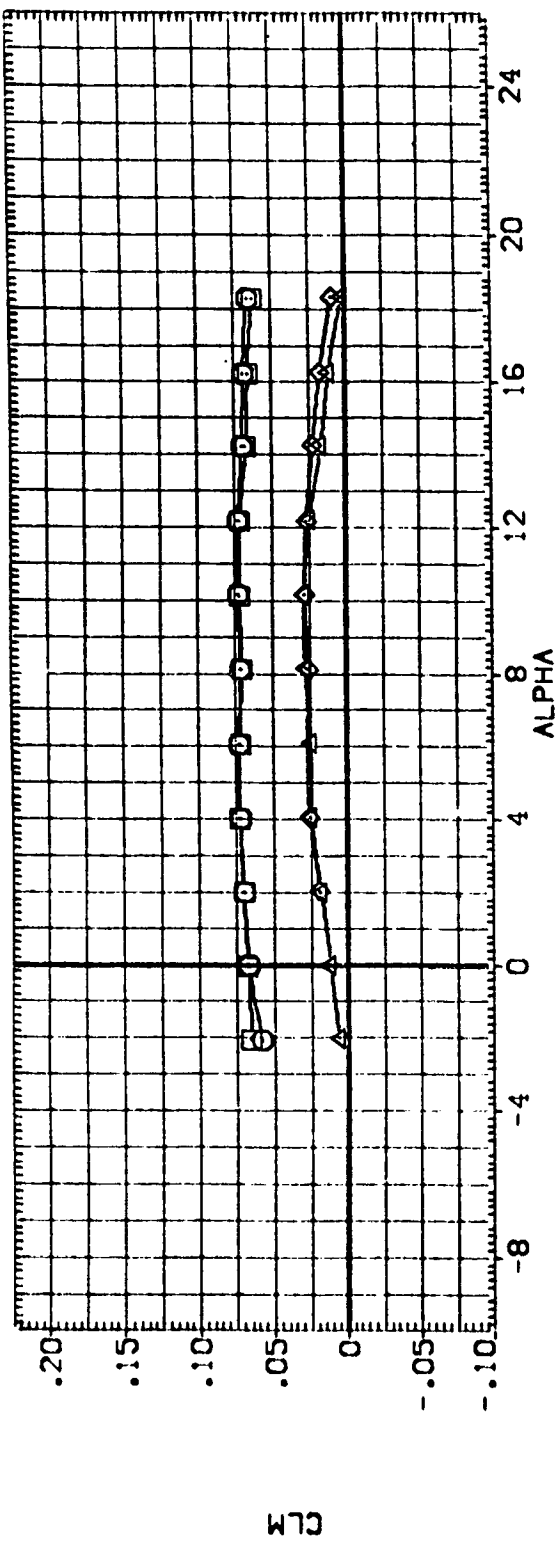


FIG 5 ORB. AFTBODY FAIRING EFF. ON LONG. CHAR. -TRAN GRIT ON
 (A)MACH = .26

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ELEVON	AILERON	RUDDER	SPDRBK	REFERENCE INFORMATION
[AFAC21]	CA123 B2C9F8M16N28V116E43V6R5 X9	.000	.000	.000	40.000	SREF 2689.8300 SQ.FT.
[AFAC25]	CA123 B2C9F8M16N28V116E43 SVS X9	.000	.000	.000	40.000	LREF 474.8100 INCHES
[AFAC27]	CA123 B2C9F8M16N28V116E43V6R5TC4X9	.000	.000	.000	40.000	BREF 936.6800 INCHES
[AFAC36]	CA123 B2C9F8M16N28V116E43V6R5TC6X9	.000	.000	.000	40.000	VMREF 1076.6800 INCHES
						ZMREF 375.0000 INCHES
						SCALE .0405

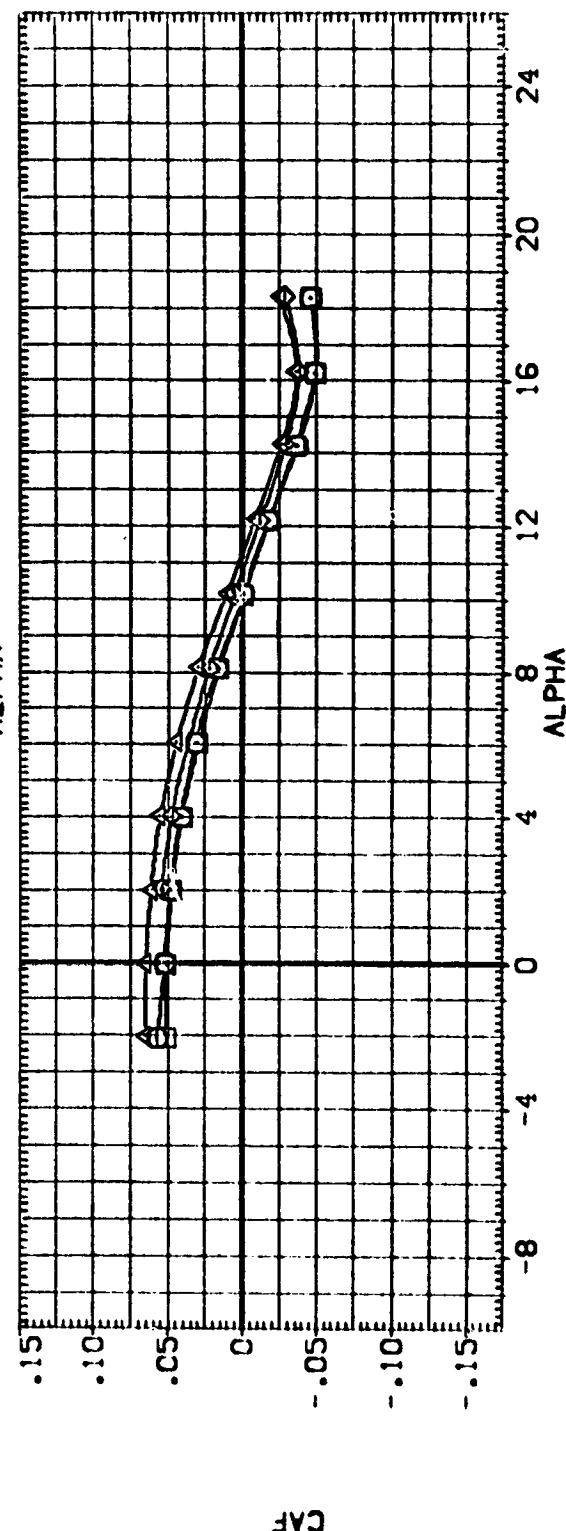
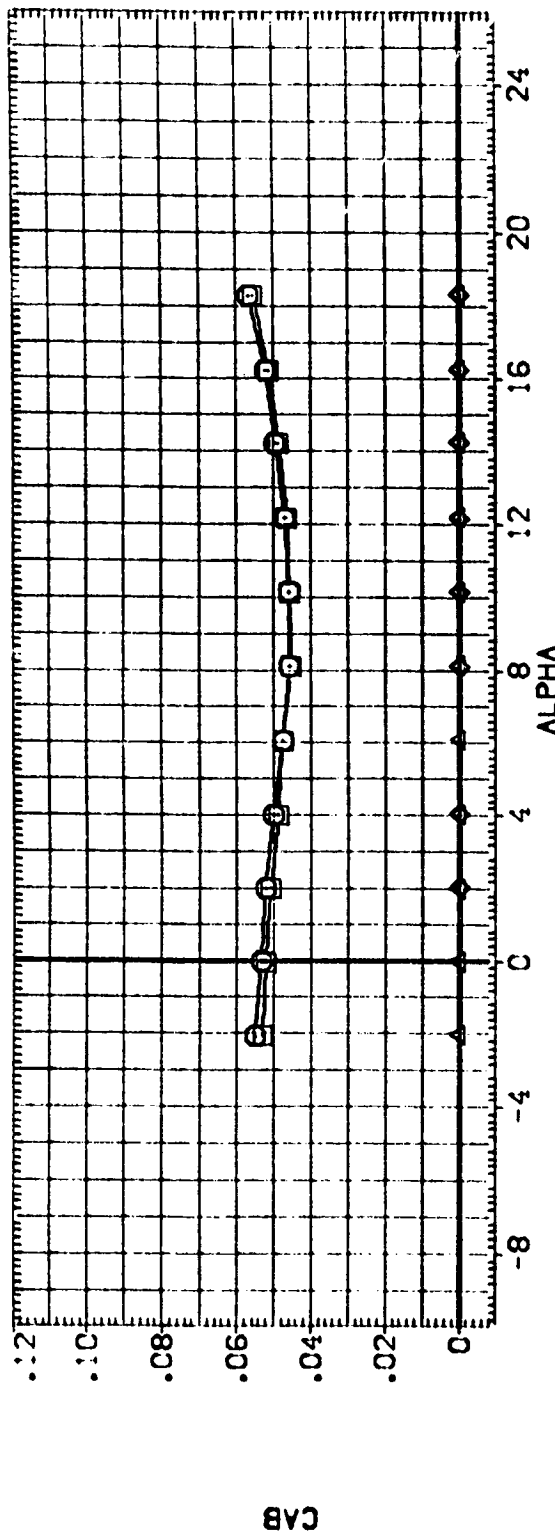


FIG 5 ORB. AFTBODY FAIRING EFF. ON LONG. CHAR. -TRAN GRIT ON

[A]MAC_h = .26



DATA SET SYMBOL: 0123 329058M16.28.116E43.685 X9
 (AFAC021) 0123 350058M16.28.116E43.685 X9
 (AFAC025) 0123 306058M16.28.116E43.685 C4X9
 (AFAC026) 0123 306058M16.28.116E43.685 C6X9
 (AFAC36)

CONFIGURATION DESCRIPTION
 0123 329058M16.28.116E43.685 X9
 0123 350058M16.28.116E43.685 X9
 0123 306058M16.28.116E43.685 C4X9
 0123 306058M16.28.116E43.685 C6X9

ELEVON AILERON RUDDER SPOILER
 .000 .000 .000 40.000
 .000 .000 .000 40.000
 .000 .000 .000 40.000
 .000 .000 .000 40.000

REFERENCE INFORMATION
 SREF 2689.8300 50 FT.
 LREF 474.8100 INCHES
 BREF 936.8800 INCHES
 YMRP 1076.0000 INCHES
 ZMRP 375.0000 INCHES
 SCALE .0405

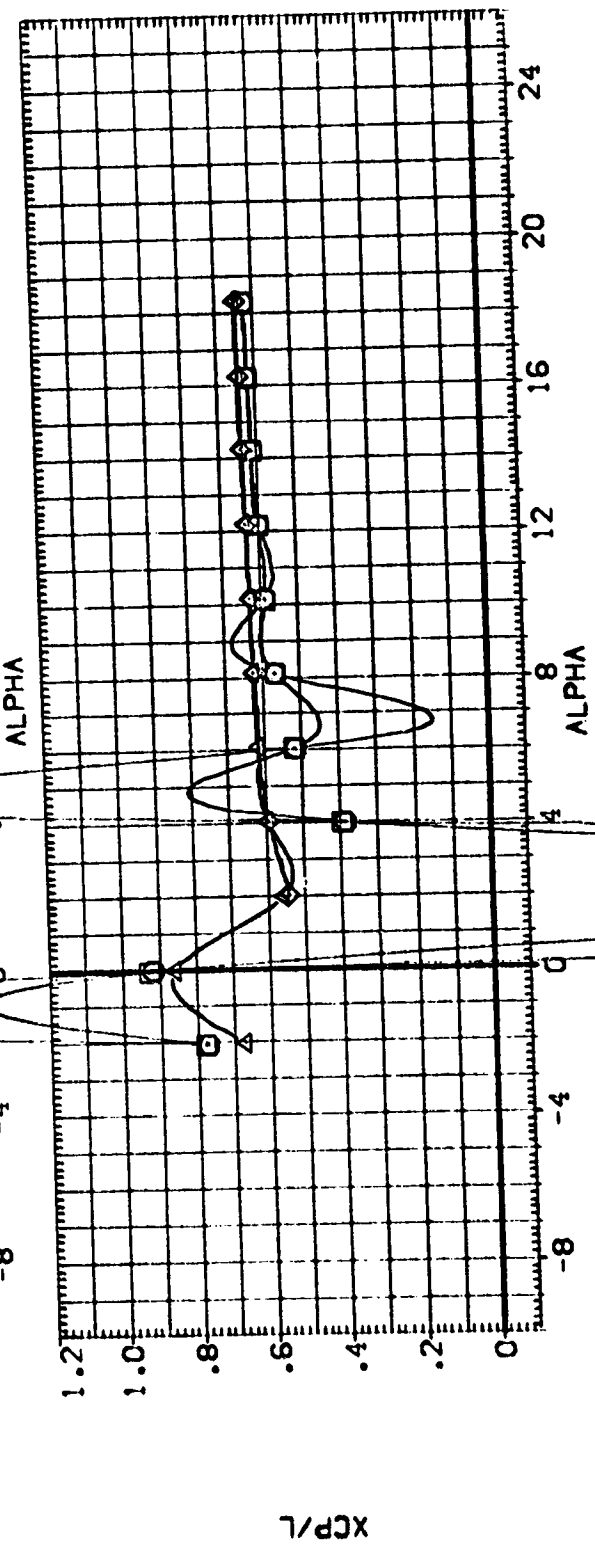
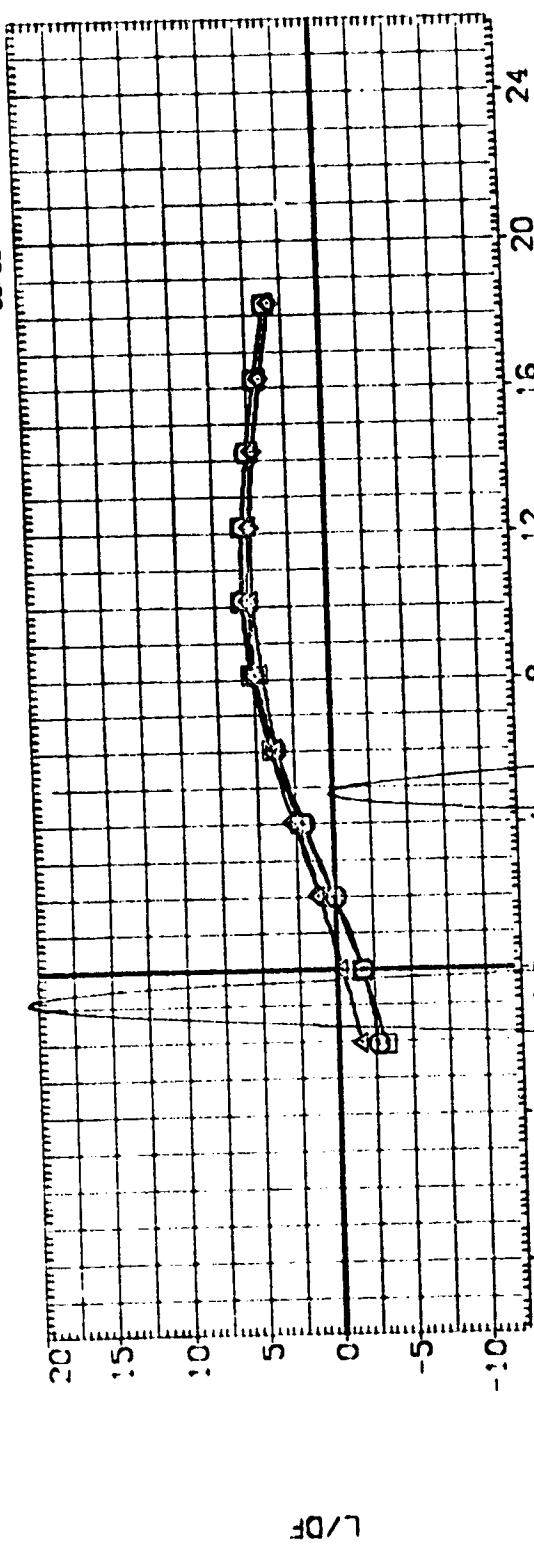


FIG 5 ORB. AFTBODY FAIRING EFF. ON LONG. CHAR. -TRAN GRIT ON

CAMACH = .26

DATA SET SYMBOL		CONFIGURATION DESCRIPTION		ELEVON		AILIRON		RUDDER		SPDBRK		REFERENCE INFORMATION	
[A1A001]	Q	DA123	B79C9F8*16A284116E43V8R5	.000	.000	.000	.000	.000	.000	40.000	SREF	589.8300	SO F
[A1A002]		DA123	B79C9F8*16A284116E43V8R5	.000	.000	.000	.000	.000	.000	40.000	LREF	474.8100	SO F
[A1A003]		DA123	B79C9F8*16A284116E43V8R5	.000	.000	.000	.000	.000	.000	40.000	BREF	836.8800	SO F
[A1A004]		DA123	B79C9F8*16A284116E43V8R5	.000	.000	.000	.000	.000	.000	40.000	YREF	1076.6800	SO F
[A1A036]		DA123	B79C9F8*16A284116E43V8R5	.000	.000	.000	.000	.000	.000	40.000	SCALE	375.0000	SCALE

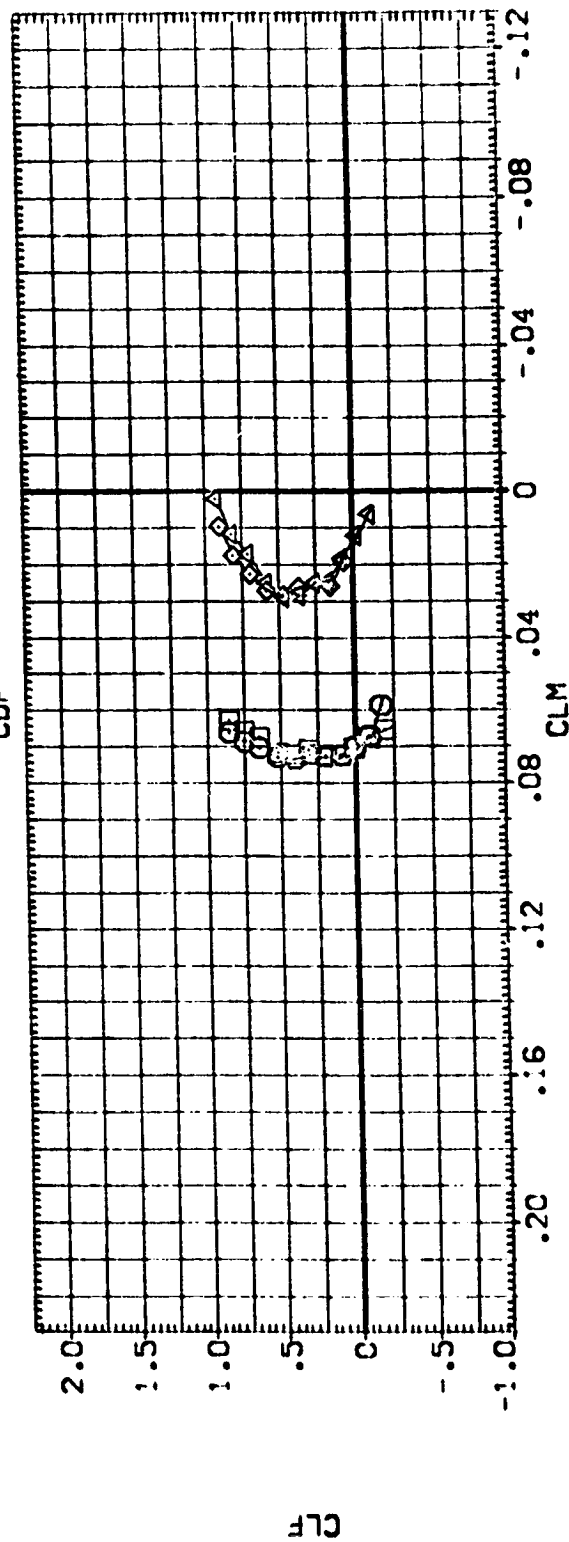
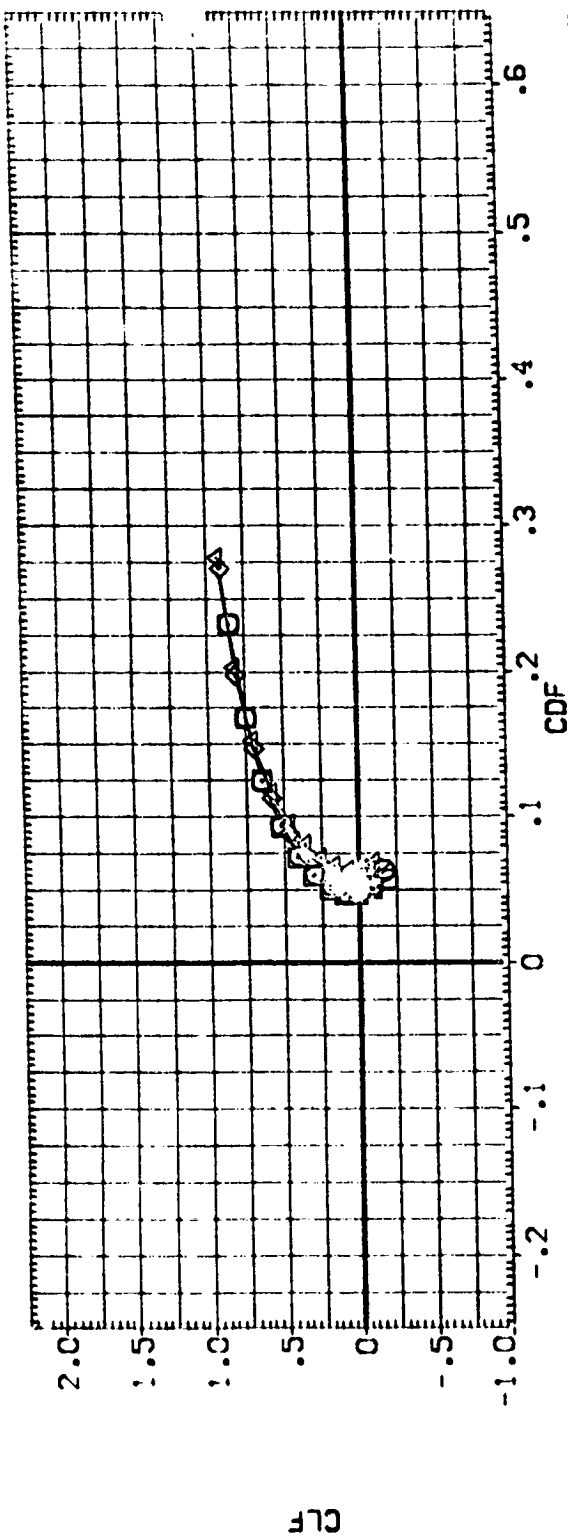


FIG 5 ORB. AFTBODY FAIRING EFF. ON LONG. CHAR. -TRAN GRIT ON

[A]YACH = .26



DATA SET SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA	ELEVON	AILERON	SPOON	REFERENCE INFORMATION
0123	87609	1281163431895	.000	.000	.000	.000	SREF 2689.8300 50.FT.S
0123	87609	1281163431895	4.000	.000	.000	.000	LREF 474.8100 NCES
0123	87609	1281163431895	8.000	.000	.000	.000	BREF 936.8800 NCES
0123	87609	1281163431895	4.000	.000	.000	.000	XREF 1076.8800 NCES
0123	87609	1281163431895	4.000	.000	.000	.000	YREF 375.0000 NCES
0123	87609	1281163431895	8.000	.000	.000	.000	SCALE .0400 NCES

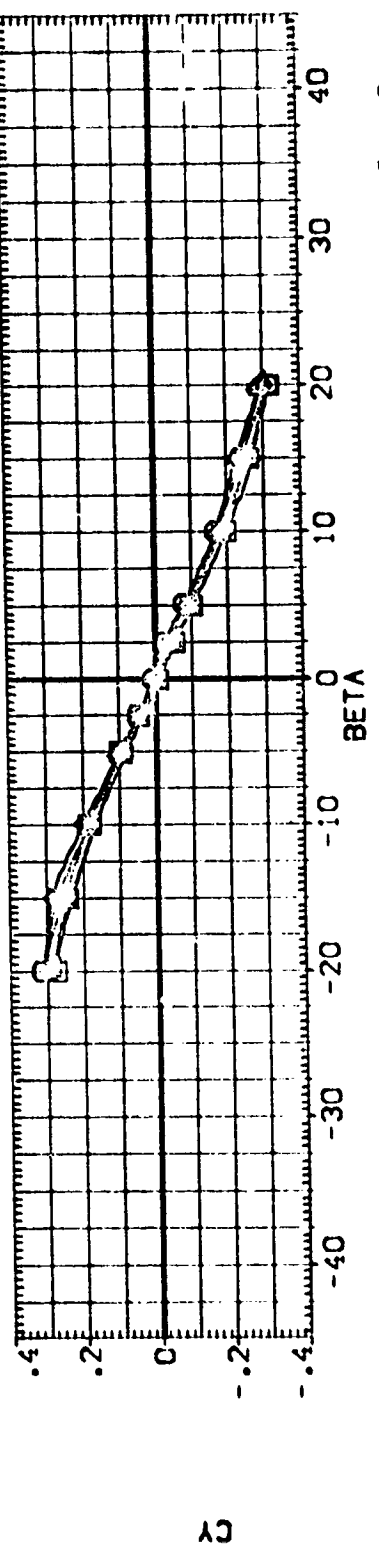
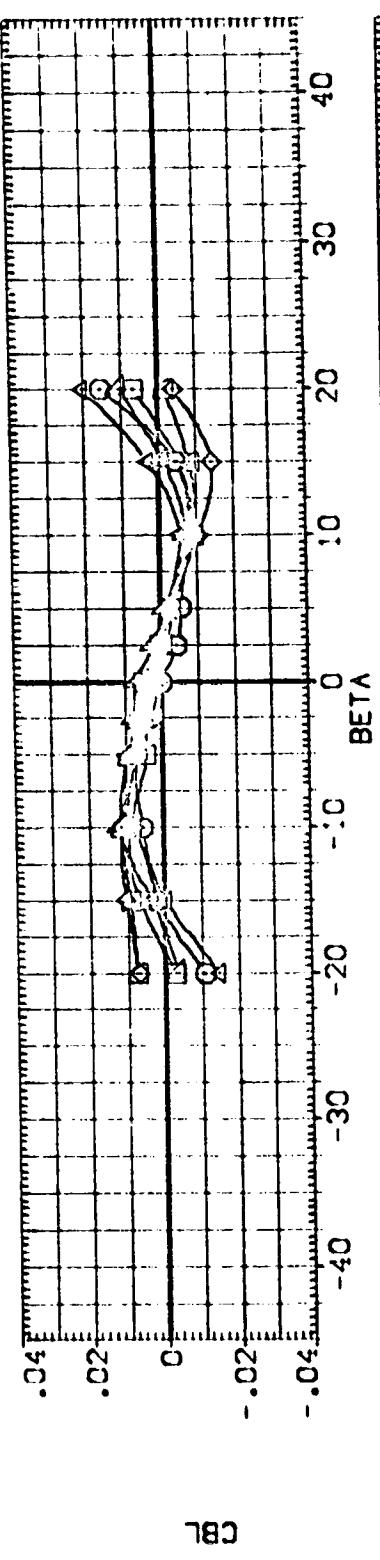
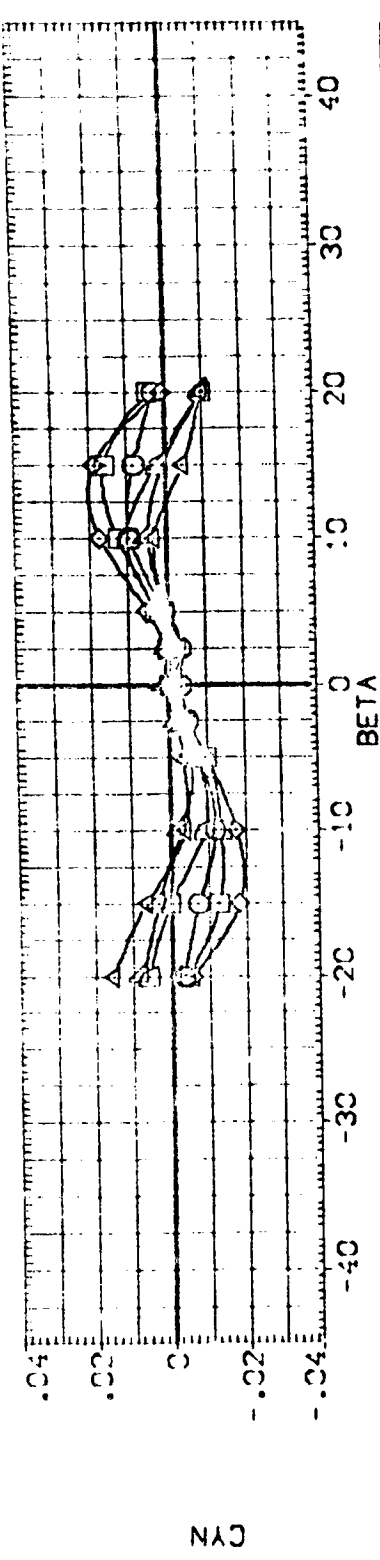


FIG 6 ORB. AFTBODY FAIRING EFF. ON LAT. CHAR. -TRAN GRIT OFF ALPHA=0.4.8

DATA SET	SYMBOL	CONFIGURATION	DESCRIPTION	ALPHA	ELEV	AIR ON	SPD30K	WIND	TEMP
01	01	01	01	01	01	01	01	01	01
02	02	02	02	02	02	02	02	02	02
03	03	03	03	03	03	03	03	03	03
04	04	04	04	04	04	04	04	04	04
05	05	05	05	05	05	05	05	05	05
06	06	06	06	06	06	06	06	06	06
07	07	07	07	07	07	07	07	07	07
08	08	08	08	08	08	08	08	08	08
09	09	09	09	09	09	09	09	09	09
10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31	31	31
32	32	32	32	32	32	32	32	32	32
33	33	33	33	33	33	33	33	33	33
34	34	34	34	34	34	34	34	34	34
35	35	35	35	35	35	35	35	35	35
36	36	36	36	36	36	36	36	36	36
37	37	37	37	37	37	37	37	37	37
38	38	38	38	38	38	38	38	38	38
39	39	39	39	39	39	39	39	39	39
40	40	40	40	40	40	40	40	40	40
41	41	41	41	41	41	41	41	41	41
42	42	42	42	42	42	42	42	42	42
43	43	43	43	43	43	43	43	43	43
44	44	44	44	44	44	44	44	44	44
45	45	45	45	45	45	45	45	45	45
46	46	46	46	46	46	46	46	46	46
47	47	47	47	47	47	47	47	47	47
48	48	48	48	48	48	48	48	48	48
49	49	49	49	49	49	49	49	49	49
50	50	50	50	50	50	50	50	50	50
51	51	51	51	51	51	51	51	51	51
52	52	52	52	52	52	52	52	52	52
53	53	53	53	53	53	53	53	53	53
54	54	54	54	54	54	54	54	54	54
55	55	55	55	55	55	55	55	55	55
56	56	56	56	56	56	56	56	56	56
57	57	57	57	57	57	57	57	57	57
58	58	58	58	58	58	58	58	58	58
59	59	59	59	59	59	59	59	59	59
60	60	60	60	60	60	60	60	60	60
61	61	61	61	61	61	61	61	61	61
62	62	62	62	62	62	62	62	62	62
63	63	63	63	63	63	63	63	63	63
64	64	64	64	64	64	64	64	64	64
65	65	65	65	65	65	65	65	65	65
66	66	66	66	66	66	66	66	66	66
67	67	67	67	67	67	67	67	67	67
68	68	68	68	68	68	68	68	68	68
69	69	69	69	69	69	69	69	69	69
70	70	70	70	70	70	70	70	70	70
71	71	71	71	71	71	71	71	71	71
72	72	72	72	72	72	72	72	72	72
73	73	73	73	73	73	73	73	73	73
74	74	74	74	74	74	74	74	74	74
75	75	75	75	75	75	75	75	75	75
76	76	76	76	76	76	76	76	76	76
77	77	77	77	77	77	77	77	77	77
78	78	78	78	78	78	78	78	78	78
79	79	79	79	79	79	79	79	79	79
80	80	80	80	80	80	80	80	80	80
81	81	81	81	81	81	81	81	81	81
82	82	82	82	82	82	82	82	82	82
83	83	83	83	83	83	83	83	83	83
84	84	84	84	84	84	84	84	84	84
85	85	85	85	85	85	85	85	85	85
86	86	86	86	86	86	86	86	86	86
87	87	87	87	87	87	87	87	87	87
88	88	88	88	88	88	88	88	88	88
89	89	89	89	89	89	89	89	89	89
90	90	90	90	90	90	90	90	90	90
91	91	91	91	91	91	91	91	91	91
92	92	92	92	92	92	92	92	92	92
93	93	93	93	93	93	93	93	93	93
94	94	94	94	94	94	94	94	94	94
95	95	95	95	95	95	95	95	95	95
96	96	96	96	96	96	96	96	96	96
97	97	97	97	97	97	97	97	97	97
98	98	98	98	98	98	98	98	98	98
99	99	99	99	99	99	99	99	99	99
100	100	100	100	100	100	100	100	100	100

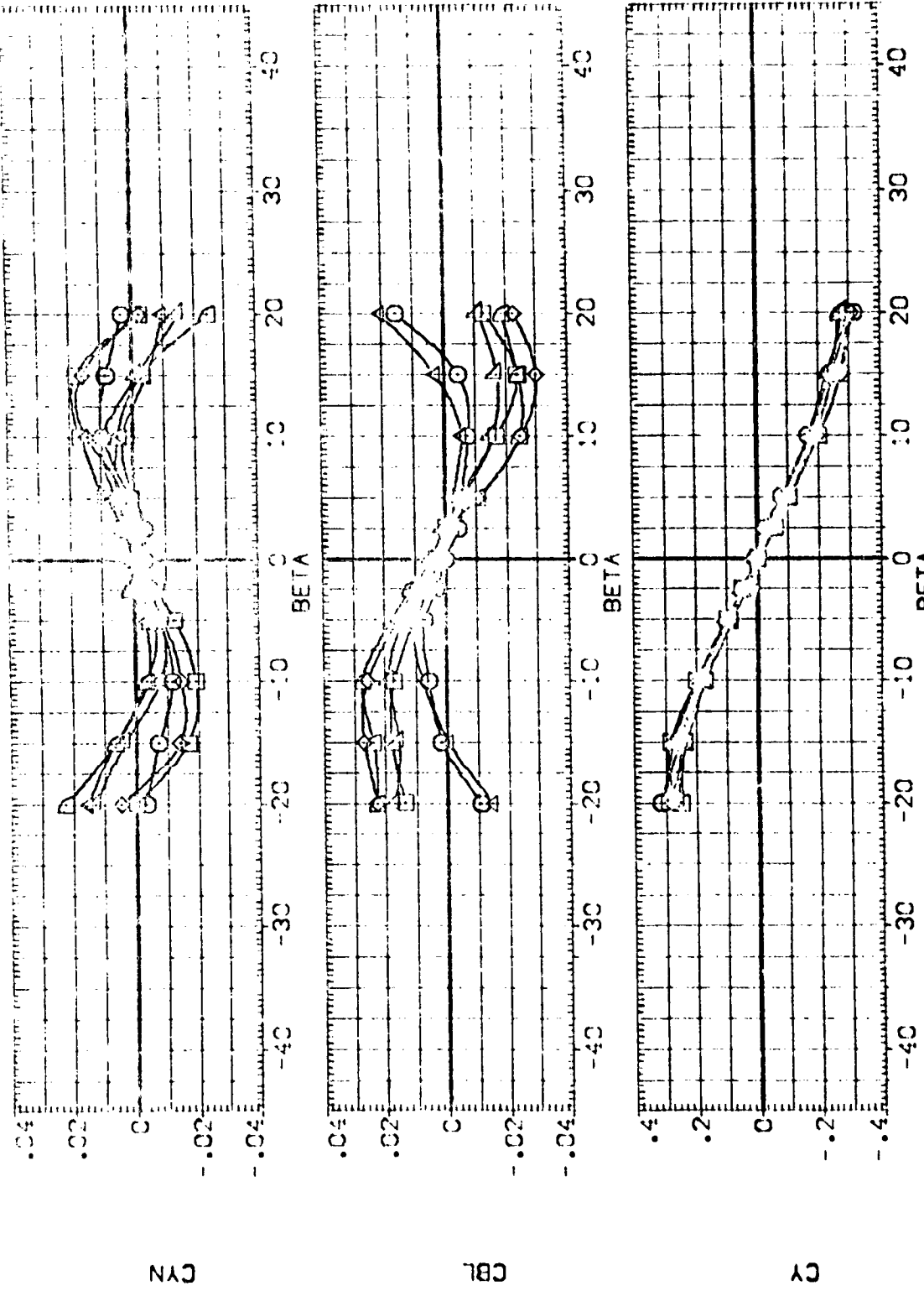


FIG 7 ORB. AFTBODY FAIRING EFF. ON LAT. CHAR. -TRAN GRIT OFF ALPHA=0.12.16
 (A)YAC- = .26

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ELEVON	AIRLON	SPOBRK	REFERENCE INFORMATION
CA123	B76C9F8M16N28V116E43V875 X9	.000	.000	.000	40.000	2689.8300 SQ.FT.
CA123	B76C9F8M16N28V116E43V875 X9	.000	.000	.000	40.000	474.8100 INCHES
CA123	B76C9F8M16N28V116E43V875 X9	.000	.000	.000	40.000	936.8800 INCHES
CA123	B76C9F8M16N28V116E43V875 X9	.000	.000	.000	40.000	1076.8800 INCHES
CA123	B76C9F8M16N28V116E43V875 X9	.000	.000	.000	40.000	375.0000 INCHES
CA123	B76C9F8M16N28V116E43V875 X9	.000	.000	.000	40.000	SCALE .0405

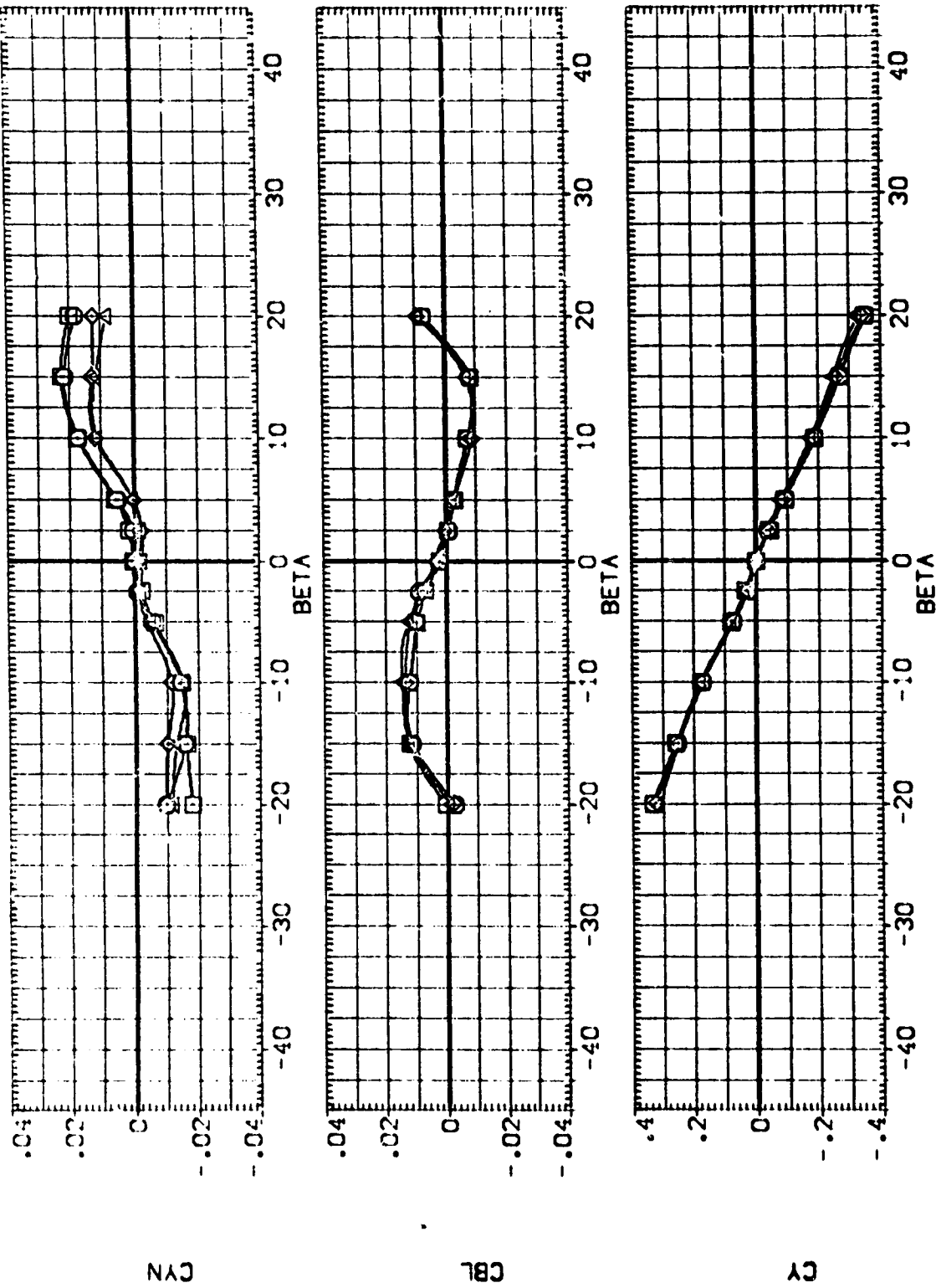


FIG 8 ORB. AFTBODY FAIRING EFF. ON LAT. CHAR.. ALPHA=0
 (A)MAC = .26

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	ALPHA	ELEVON	AIRLON	SPDRK	REFERENCE INFORMATION	SO.FT.
(R-4074)	CA123 B76C9 M16 V11643V8V5 X9	8.000	.000	.000	40.000	SREF	2689.8300
(R-4078)	CA123 B76C9 M16 V11643V8V5 X9	8.000	.000	.000	40.000	LREF	474.8100
(R-4080)	CA123 B76C9 M16 V11643V8V5 X9	8.000	.000	.000	40.000	BREF	936.8800
(R-4082)	CA123 B76C9 M16 V11643V8V5 X9	8.000	.000	.000	40.000	XMRP	1076.8800
(R-4084)	CA123 B76C9 M16 V11643V8V5 X9	8.000	.000	.000	40.000	YMRP	.0000
(R-4086)	CA123 B76C9 M16 V11643V8V5 X9	8.000	.000	.000	40.000	ZMRP	.0000
(R-4088)	CA123 B76C9 M16 V11643V8V5 X9	8.000	.000	.000	40.000	SCALE	.0405
(R-4090)	CA123 B76C9 M16 V11643V8V5 X9	8.000	.000	.000	40.000	SCALE	.0405

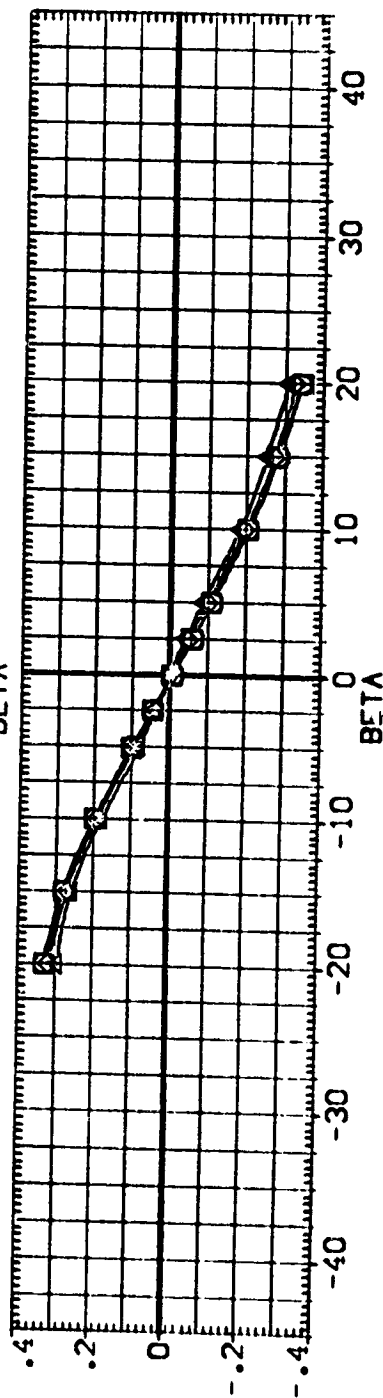
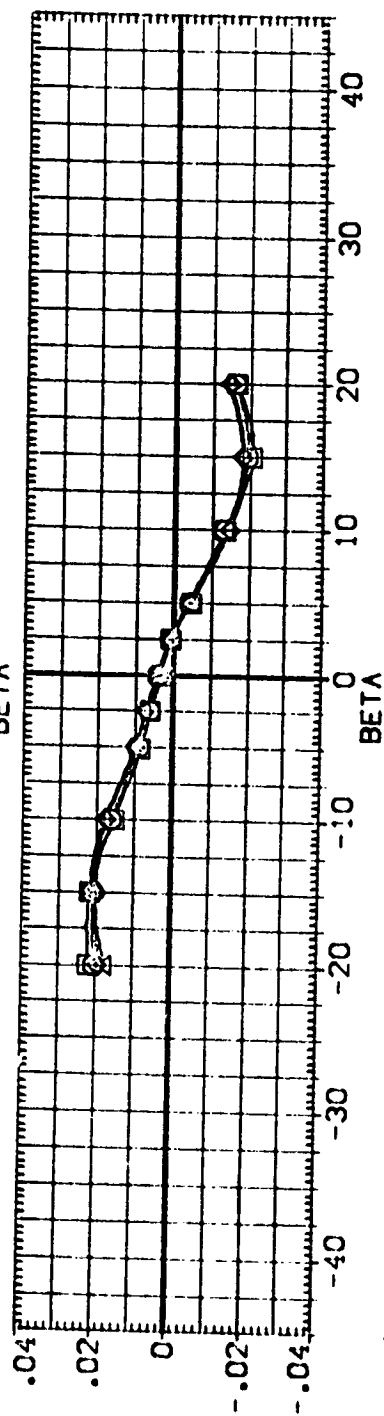
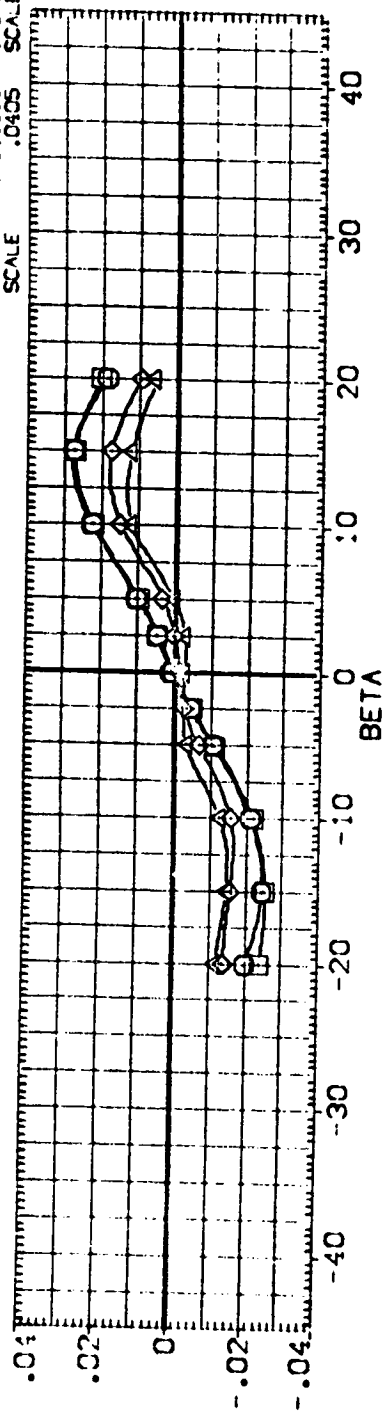


FIG 10 ORB. AFTBODY FAIRING EFF. ON LAT. CHAR., ALPHA=8

(A)MACH = .26

DATA SET SYMBOL CONFIGURATION DESCRIPTION

CA123 826C9 8116N28V116E43V8R5 X9

CA123 826C9 8116N28V116E43V8R5 X9

CA123 826C9 8116N28V116E43V8R5 X9

CA123 826C9 8116N28V116E43V8R5 X9

CA123 826C9 8116N28V116E43V8R5 X9

REFERENCE INFORMATION

SREF 2689.8300 50. FT.

LREF 174.8100 INCHES

BREF 936.6800 INCHES

XMRD 1076.6800 INCHES

YMRD .0000 INCHES

ZMRD 375.0000 INCHES

SCALE .0405

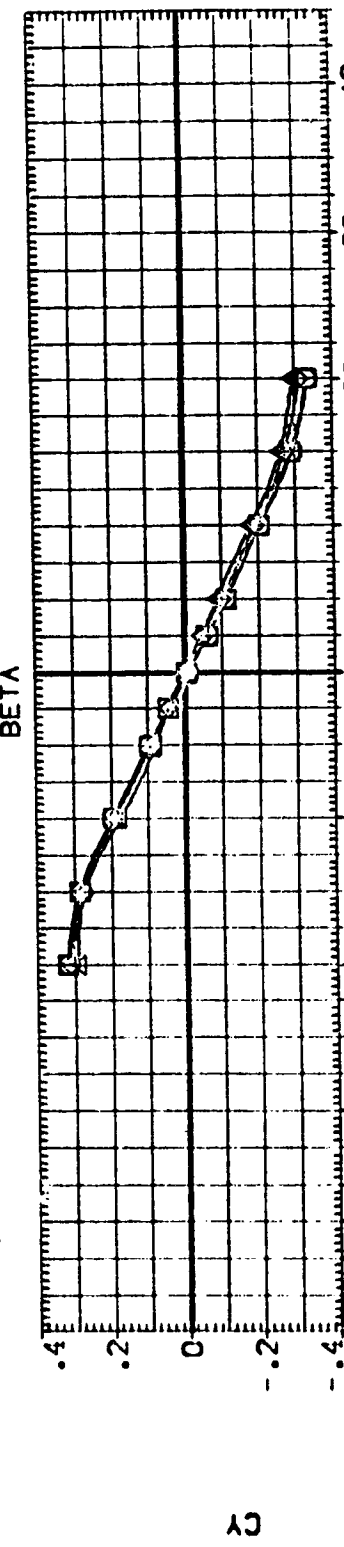
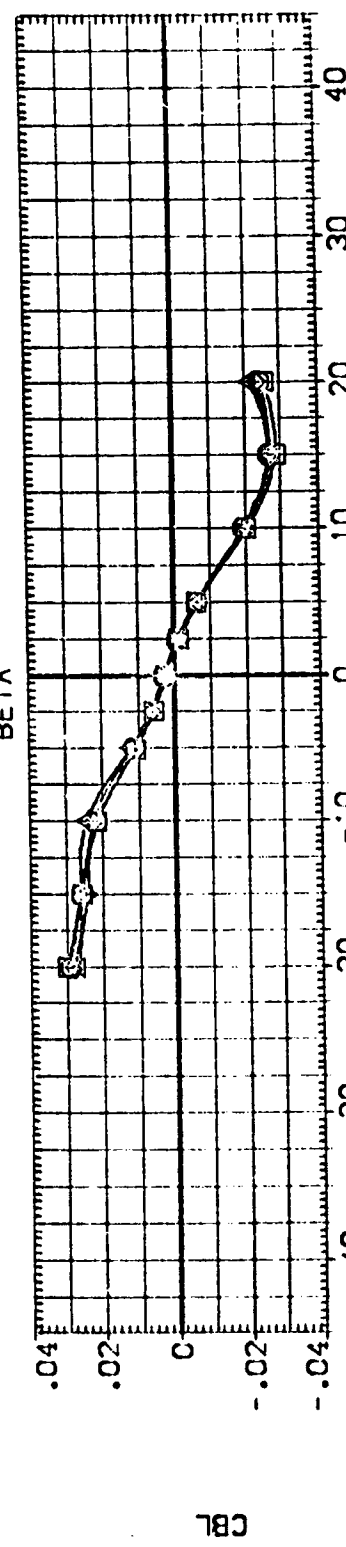
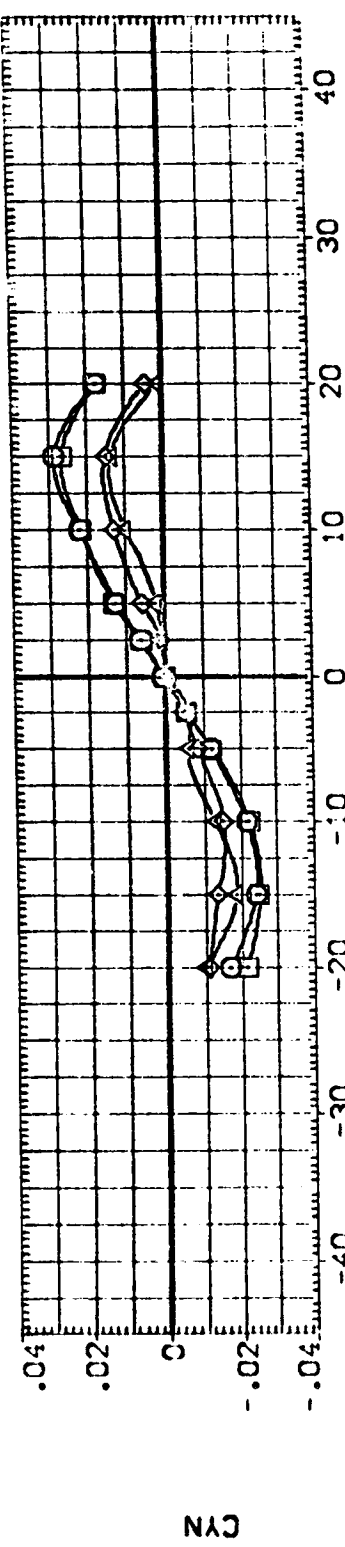


FIG 11 ORB. AFTBODY FAIRING EFF. ON LAT. CHAR., ALPHA=12

CA3VACH = .26



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		REFERENCE INFORMATION	
REF AC16	Q	DA123	526C9 8M16N28V116E43V8R5	SREF	2689.8300
REF AC17	X	DA123	526C9 8M16N28V116E43V8R5	LREF	474.8100
REF AC18	X	DA123	526C9 8M16N28V116E43V8R5	BREF	936.6800
REF AC19	X	DA123	526C9 8M16N28V116E43V8R5	XMRP	1076.6800
REF AC20	X	DA123	526C9 8M16N28V116E43V8R5	YMRP	.0000
REF AC21	X	DA123	526C9 8M16N28V116E43V8R5	ZMRP	.0000
REF AC22	X	DA123	526C9 8M16N28V116E43V8R5	SCALE	.0405
REF AC23	X	DA123	526C9 8M16N28V116E43V8R5	SCALE	.0405

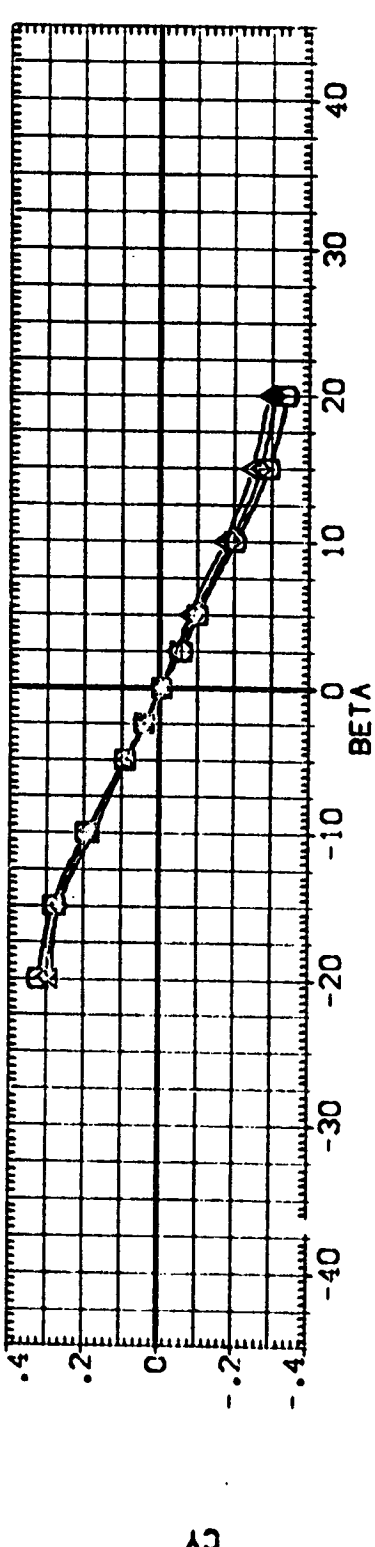
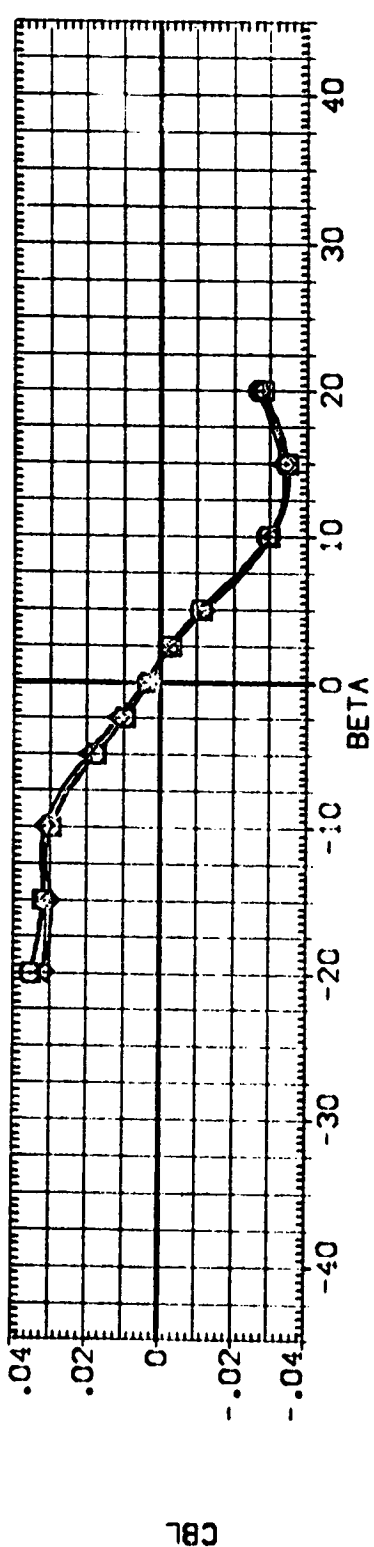
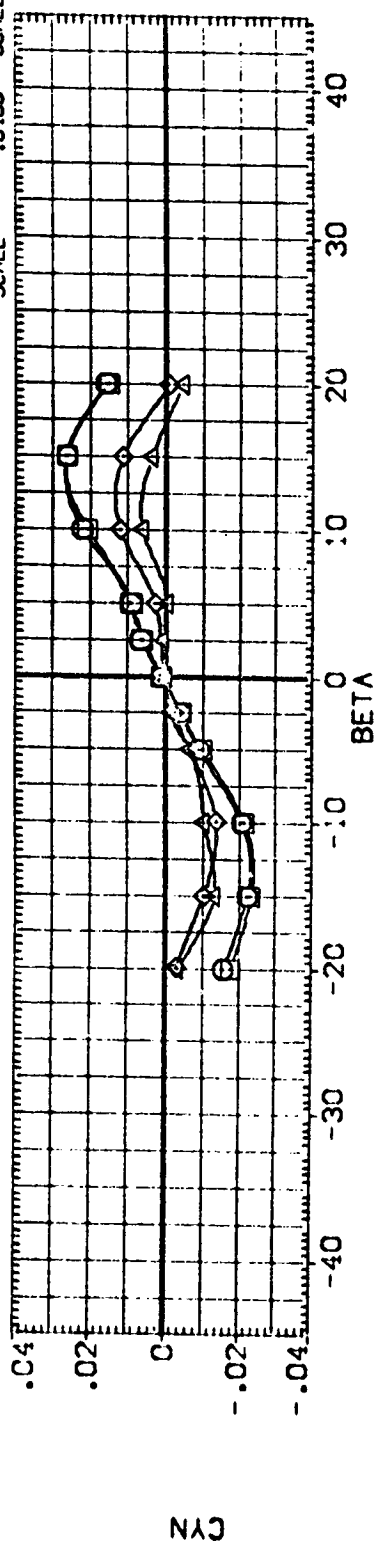


FIG 12 ORB. AFTBODY FAIRING EFF. ON LAT. CHAR., ALPHA=16

(A)MACH = .26

APPENDIX
TABULATED SOURCE DATA

Tabulations of plotted data are available
on request from Data Management Services.

DATE 28 JAN 75

TABULATED SOURCE DATA - 0A123

0A123 226C9 M7 N28M18E43V8R5

PARAMETRIC DATA

BETA = .000 ELEVON = .000
AILRON = .000 RUDDER = .000
SPOBRK = .000

REFERENCE DATA

WREF = 2409.0300 36-FT. XREF = 1076.0000 INCHES
LREF = 474.0100 INCHES YREF = .0000 INCHES
BLP = 938.0000 INCHES ZREF = 375.0000 INCHES
SCALE = .0405 SCALE

RUN NO. 1/0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	ALPHA	CL	CDP	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-2.050	-.14950	.04320	.03480	-.14980	.03762	-.00330	-.00260	.01300	.73700	.04760
.200	-.010	-.08050	.03740	.03910	-.08050	.03748	-.00200	-.00050	.00900	.89000	.04665
.200	2.000	.02970	.03510	.04460	.03090	.03404	-.00240	.00000	.00400	.12100	.04547
.200	4.030	.12510	.03470	.04720	.12730	.02563	-.00150	.00180	.00000	.51900	.04484
.200	6.070	.22750	.03910	.04760	.23040	.01482	-.00170	.00190	.00000	.57600	.04342
.200	8.110	.33560	.04670	.04620	.33690	-.00109	-.00110	.00160	.00000	.60100	.04266
.200	10.140	.44110	.06000	.04750	.44470	-.01864	-.00130	.00120	.00100	.61200	.04380
.200	12.170	.54860	.08020	.04940	.55320	-.03726	-.00140	.00090	.00100	.61900	.04452
.200	14.210	.66670	.11040	.04830	.67340	-.05673	-.00170	.00090	.00000	.62500	.04647
.200	16.250	.78230	.15620	.04500	.79480	-.06899	-.00170	.00130	.00100	.63100	.04928
.200	18.300	.87920	.22940	.03990	.90660	-.05821	.00140	.00310	.00400	.63500	.05418
.200	GRADIENT	.04499	-.00137	.00211	.04556	-.00196	.00025	.00068	-.00196	-.07064	-.00052

(RFAD002) (27 JAN 75)

PARAMETRIC DATA

ALPHA = .000 ELEVON = .000
AILRON = .000 RUDDER = .000
SPOBRK = .000

REFERENCE DATA

WREF = 2409.0300 36-FT. XREF = 1076.0000 INCHES
LREF = 474.0100 INCHES YREF = .0000 INCHES
BLP = 938.0000 INCHES ZREF = 375.0000 INCHES
SCALE = .0405 SCALE

RUN NO. 2/0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CDP	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-19.990	-.00430	-.00300	.01870	-.00430	-.00308	-.00350	-.01100	.31400	2.07700	.07824
.200	-15.010	-.00740	.07490	.02140	-.00740	.00497	-.00740	.00170	.25500	1.70500	.05930
.200	-10.000	-.02930	.02960	.02170	-.02930	.02960	-.01200	.00550	.16100	.92400	.05134
.200	-5.010	-.05020	.03600	.03020	-.03030	.03604	-.00810	.00670	.08900	.67300	.04793
.200	-2.490	-.08050	.03760	.03820	-.08050	.03764	-.00550	.00300	.04700	.67200	.04704
.200	.000	-.05960	.03950	.03790	-.05960	.03955	-.00350	.00000	.00900	.66700	.04647
.200	2.500	-.05810	.04000	.03660	-.05810	.04002	-.00360	-.00450	-.07500	.66500	.04795
.200	5.030	-.04770	.03530	.03220	-.04770	.03533	.00060	-.00370	-.07500	.90000	.04856
.200	10.030	-.02480	.02270	.02420	-.02490	.02274	.00920	-.00780	-.16600	1.01000	.05269
.200	15.020	-.00680	.01560	.01610	-.00680	.01569	.00820	-.00470	-.23600	1.52200	.05625
.200	20.080	.00530	.00590	.00700	.00550	.00596	.00310	.01530	-.31600	.16300	.07266
.200	GRADIENT	.00030	.00004	.00016	.00030	.00004	.00076	-.00129	-.01608	.00267	.00009

Q183 B26C9 M7 N28M16E43V8R5

(RFAD03) (27 JAN 75)

REFERENCE DATA

SRP = 2889.8300 36. FT. XMRP = 1078.8600 INCHES
 LREF = 474.8100 INCHES YMRP = .0000 INCHES
 BRP = 938.8000 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

PARAMETRIC DATA

ALPHA = 4.000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPOBRK = .000

RUN NO. 3/0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.280	-20.000	.17870	.01780	.00920	.17890	-.00324	-.071460	-.00310	.30700	.61500	-.07718
.280	-15.000	.18600	.02470	.00560	.18600	-.00731	-.01290	.00660	.26600	.60300	-.05677
.280	-9.980	.16500	.02500	.02460	.16640	.01297	-.01350	.00890	.18500	.59600	-.04995
.280	-5.000	.14080	.03540	.03300	.14260	.02304	-.00970	.00440	.09800	.56000	-.04635
.280	-2.500	.13520	.03980	.03580	.13740	.02622	-.00430	.00470	.04200	.54500	-.04537
.280	-.010	.13480	.04250	.03790	.13710	.02635	-.00090	.00460	-.00900	.53800	-.04439
.280	2.500	.13720	.04160	.03690	.13940	.02718	-.00040	.00020	-.04800	.54200	-.04639
.280	5.020	.14960	.03760	.03240	.15050	.02185	.00300	-.00270	-.09300	.55900	-.04750
.280	10.040	.17540	.02440	.02370	.17660	.01129	.01240	-.00900	-.18000	.60100	-.05105
.280	15.070	.25020	.01310	.01290	.20360	-.00126	.01580	-.00560	-.26000	.62400	-.05770
.280	20.080	.19560	.01190	.00580	.19560	-.00704	.00420	.00660	-.31700	.62900	-.07476
GRADIENT	.00071	.00026	.00026	-.00001	.00070	-.00006	.00117	-.00075	-.01885	-.00019	-.00012

Q183 B26C9 M7 N28M16E43V8R5

(RFAD04) (27 JAN 75)

REFERENCE DATA

SRP = 2889.8300 36. FT. XMRP = 1078.8600 INCHES
 LREF = 474.8100 INCHES YMRP = .0000 INCHES
 BRP = 938.8000 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

PARAMETRIC DATA

ALPHA = 8.000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPOBRK = .000

RUN NO. 4/0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.280	-20.000	.38240	.02670	.03300	.35350	-.01701	-.00970	.00690	.30000	.62400	-.08155
.280	-15.020	.37900	.03120	.02130	.37820	-.03218	-.01830	.01030	.28300	.62100	-.05575
.280	-10.000	.35800	.03690	.03690	.35770	-.01574	-.01730	.01110	.19800	.61600	-.04924
.280	-5.015	.35020	.04740	.04740	.35340	-.00248	-.01000	.00650	.09700	.61600	-.04603
.280	-2.500	.35020	.04980	.04980	.35370	-.00060	-.00530	.00480	.04500	.61400	-.04368
.280	.000	.34410	.04080	.04980	.34770	.00080	-.00150	.00320	-.00600	.60800	-.04250
.280	2.510	.34070	.04540	.04840	.34410	-.00005	.00060	.00010	-.05200	.60500	-.04433
.280	5.020	.34720	.04110	.04410	.34990	-.00532	.00510	-.00310	-.10100	.60800	-.04602
.280	10.040	.36980	.03170	.03330	.37080	-.01924	.01710	-.01050	-.19500	.62000	-.05007
.280	15.020	.39220	.02190	.02930	.39240	-.02643	.01850	-.01430	-.26900	.63100	-.05733
.280	20.080	.36560	.02750	.02880	.36610	-.02310	.00080	-.00440	-.30000	.62400	-.06002
GRADIENT	-.00062	-.00062	.00082	-.00030	-.00066	-.00020	.00144	-.00095	-.01966	-.00100	-.00002

DATE 20 JAN 75

TABULATED SOURCE DATA - 04123

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04123 226C9 M7 N20416E43V0R5

(NFAD005) (27 JAN 75)

REFERENCE DATA

SRP = 2000.0000 30.FT. XMRP = 1076.0000 INCHES
 LMRP = 474.0100 INCHES YMRP = .0000 INCHES
 BRP = 938.0000 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

PARAMETRIC DATA

ALPHA = 12.000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPDRK = .000

RUN NO. 9/0 RM/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACN	BETA	CL	CLP	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-19.970	.55430	.07230	.03300	.55730	-.04834	-.00040	.01370	.29000	.63000	.08791
.200	-14.990	.56130	.06340	.03440	.56160	-.06076	-.01670	.01770	.28100	.63000	.05000
.200	-9.990	.57060	.07510	.03100	.57970	-.04842	-.01930	.01700	.19800	.63200	.05186
.200	-5.000	.56770	.08180	.03710	.57210	-.04009	-.01280	.01010	.10000	.62800	.04548
.200	-2.490	.56260	.08360	.04130	.56780	-.03703	-.00690	.00590	.04600	.62500	.04410
.200	.020	.55790	.08430	.04490	.56310	-.03530	-.00130	.00270	-.00400	.62200	.04360
.200	2.320	.55910	.07930	.04500	.56330	-.04029	.00320	-.00030	-.05500	.62200	.04420
.200	9.040	.56060	.07680	.04090	.57020	-.04437	.00870	-.00510	-.10400	.62500	.04568
.200	10.030	.56270	.07230	.03080	.58480	-.03239	.01630	-.01700	.03500	.63000	.05175
.200	15.030	.56060	.06940	.02440	.59200	-.03669	.01760	-.02330	-.27100	.63600	.05763
.200	20.060	.55620	.07220	.03230	.56090	-.04722	-.00260	-.01330	-.29200	.63000	.08778
GRADIENT		-.00021	-.00035	.00045	-.00032	-.00049	.00212	-.00145	-.02029	-.00036	-.00004

04123 226C9 M7 N20416E43V0R5

(RFAD006) (27 JAN 75)

REFERENCE DATA

SRP = 2000.0000 30.FT. XMRP = 1076.0000 INCHES
 LMRP = 474.0100 INCHES YMRP = .0000 INCHES
 BRP = 938.0000 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

PARAMETRIC DATA

ALPHA = 16.000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPDRK = .000

RUN NO. 9/0 RM/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACN	BETA	CL	CLP	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-20.000	.75030	.15700	.02740	.77010	-.08087	-.00470	.02270	.27600	.63000	.09488
.200	-15.030	.76020	.14950	.02970	.80700	-.03590	-.01400	.02670	.27400	.63000	.06359
.200	-10.010	.76310	.15680	.02960	.80610	-.06096	-.01480	.02560	.18800	.63000	.05405
.200	-5.030	.76090	.16930	.03670	.80290	-.05782	-.00910	.01570	.09200	.63500	.04988
.200	-2.520	.76780	.17150	.03920	.80440	-.05905	-.00140	.01010	.03600	.63400	.04953
.200	-.020	.79300	.18100	.04340	.80640	-.06794	-.00110	.00290	-.00590	.63500	.04877
.200	2.490	.79040	.19600	.04540	.80270	-.07083	.00370	-.00170	-.05600	.63100	.04823
.200	5.000	.78090	.16290	.03990	.80100	-.06403	.00370	-.01070	-.03500	.63300	.04936
.200	10.010	.79700	.15570	.02780	.80870	-.07372	.01430	-.02500	-.19300	.63800	.05351
.200	15.030	.80140	.14720	.02100	.81050	-.08321	.01570	-.02590	-.27300	.64500	.06311
.200	20.030	.79070	.15210	.01700	.80170	-.07542	-.00270	-.02290	-.30500	.64400	.06479
GRADIENT		.00010	-.00112	.00030	-.00022	-.00110	.00114	-.00256	-.01851	-.00028	-.00009

DATE 20 JAN 79 TABULATED SOURCE DATA - 04123

04123 020C9 M7 N20W16E43V083TC3

04123 020C9 M7 N20W16E43V083TC3

04123 020C9 M7 N20W16E43V083TC3

PARAMETRIC DATA

REFERENCE DATA

REF = 2009.0300 30-FT. XREF = 1076.0000 INCHES
LREF = 474.0100 INCHES YREF = .0000 INCHES
BREF = 938.0000 INCHES ZREF = 375.0000 INCHES
SCALE = .0405 SCALE

RUN NO. 7/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00									
MACH	ALPHA	CL	CDP	CLM	CN	CAF	CYN	CBL	CY
.200	-2.040	-10760	.04800	-.00330	-.10930	.04479	-.00300	-.00160	.01000
.200	.000	-.01300	.04420	-.00240	-.01320	.04423	-.00110	.00090	.00000
.200	2.010	.07870	.04290	.00190	.08010	.04018	.00020	.00330	-.00700
.200	4.040	.17190	.04470	.00760	.17460	.03253	.00110	.00310	.03500
.200	6.070	.27630	.05010	.09410	.28210	.02044	.00190	.00590	.04600
.200	8.120	.38950	.06180	.00120	.39040	.00672	.00040	.00400	.00900
.200	10.180	.49450	.07730	.00010	.50040	-.01114	.00060	.00420	.00900
.200	12.210	.60350	.10070	.00070	.61120	-.02926	.00040	.00410	.00900
.200	14.260	.72150	.13320	-.00320	.73210	-.04860	-.00040	.00280	.00900
.200	16.300	.85810	.18080	-.00080	.85510	-.06172	-.00030	.00320	.00900
.200	18.350	.94120	.26000	-.02340	.97520	-.04951	.00290	.00490	.00900
GRADIENT		.04600	-.00064	.00215	.04672	-.00202	.00067	.00111	-.00346

04123 020C9 M7 N20W16E43V083TC3

04123 020C9 M7 N20W16E43V083TC3

04123 020C9 M7 N20W16E43V083TC3

PARAMETRIC DATA

REFERENCE DATA

REF = 2009.0300 30-FT. XREF = 1076.0000 INCHES
LREF = 474.0100 INCHES YREF = .0000 INCHES
BREF = 938.0000 INCHES ZREF = 375.0000 INCHES
SCALE = .0405 SCALE

RUN NO. 8/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00									
MACH	BETA	CL	CDP	CLM	CN	CAF	CYN	CBL	CY
.200	-20.010	.03630	.01530	-.01810	.03630	.01532	.01510	-.01480	.03600
.200	-13.020	.02760	.02410	-.01810	.02760	.02409	.00640	-.00060	.06700
.200	-10.020	.00990	.03670	-.01690	.00990	.03676	-.00410	.00710	.16600
.200	-5.040	-.00360	.04440	-.01160	-.00360	.04445	-.00370	.00970	.00000
.200	-2.590	-.01730	.04460	-.00230	-.01730	.04461	-.00280	.00570	.03900
.200	-.030	-.01160	.04590	-.00430	-.01160	.04560	-.00170	.00240	-.00100
.200	2.470	-.00910	.04570	-.00330	-.00910	.04679	-.00350	-.00180	.03600
.200	4.990	.00240	.04230	-.01020	.00240	.04232	-.00070	.00290	.03600
.200	10.000	.02440	.03470	-.02050	.02440	.03469	.00300	-.00550	.16700
.200	14.990	.04080	.03170	-.02710	.04080	.03177	-.00480	.00270	.06600
.200	20.010	.09060	.03170	-.03620	.09060	.03167	-.00980	.00200	.30000
GRADIENT		.00062	-.00008	-.00001	.00082	-.00008	.00021	-.00130	-.01599

DATE 28 JAN 75

TABULATED SOURCE DATA - 0A123

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0A123 B29C9 M7 N28W416E43V8R5TC3

(RFAD009) (27 JAN 75)

REFERENCE DATA

MACH = 2.000-3.000 30-FT. ZAMP = 1076.0000 INCHES
 LREF = 474.0100 INCHES YAMP = .0000 INCHES
 BREF = 936.0000 INCHES ZAMP = 375.0000 INCHES
 SCALE = .0405 SCALE

RUN NO. 9/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CPL	CY	XCP/L	CAB
.200	-20.020	.22510	-.04240	.04540	.22760	.02930	.00770	-.02770	.27900	.72000	.00000
.200	-15.030	.22390	-.01720	.02650	.22530	.01059	.00310	.00310	.23600	.60000	.00000
.200	-10.010	.20770	-.01590	.03660	.20990	.02364	-.00290	.01150	.16400	.60000	.00000
.200	-5.020	.18320	-.00270	.04200	.18570	.02697	-.00580	.00700	.09200	.63700	.00000
.200	-2.530	.17730	-.00280	.04200	.18000	.03242	-.00220	.00770	.03800	.64600	.00000
.200	-.030	.17950	.00560	.04590	.17930	.03338	.00080	.00650	-.01300	.64000	.00000
.200	2.470	.18390	.00160	.04480	.18670	.03173	.00000	.00200	-.05200	.64000	.00000
.200	4.990	.19180	-.00340	.04120	.19420	.02754	.00110	-.00150	-.09500	.63600	.00000
.200	10.000	.21630	-.01740	.03580	.21830	.02034	.00460	-.00710	-.17500	.60100	.00000
.200	15.020	.23900	-.02800	.03120	.24060	.01416	.00060	-.00140	-.25700	.69500	.00000
.200	20.000	.25910	-.04180	.03980	.24140	.02269	-.01020	.01010	-.29200	.71500	.00000
GRADIENT	.00095	-.00007	-.00011	-.00001	.00095	-.00014	.00064	-.00069	-.01854	.00016	.00000

PARAMETRIC DATA

ALPHA = 4.000 ELEVON = .000
 AILERON = .000 RUDDER = .000
 SPOBRK = .000

0A123 B29C9 M7 N28W416E43V8R5TC3

(RFAD010) (27 JAN 75)

REFERENCE DATA

MACH = 2.000-3.000 30-FT. ZAMP = 1076.0000 INCHES
 LREF = 474.0100 INCHES YAMP = .0000 INCHES
 BREF = 936.0000 INCHES ZAMP = 375.0000 INCHES
 SCALE = .0405 SCALE

RUN NO. 10/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-20.020	.41990	-.05060	.07270	.42590	.01245	.00590	.00750	.27500	.69600	.00000
.200	-15.030	.42600	-.01900	.04860	.42860	-.01482	.00010	.00810	.24600	.68600	.00000
.200	-10.010	.40120	-.01050	.03070	.40430	-.00680	-.00910	.01180	.18400	.68100	.00000
.200	-5.030	.39780	-.00660	.03970	.40210	.00279	-.00740	.00940	.09400	.65600	.00000
.200	-2.520	.39800	-.00450	.04220	.40060	.00553	-.00360	.00700	.04200	.65600	.00000
.200	-.030	.39030	.00080	.04590	.39530	.00706	-.00190	.00450	-.00700	.65100	.00000
.200	2.470	.38570	.00230	.04660	.39030	.00562	.00000	.00080	-.03200	.64900	.00000
.200	5.000	.39300	-.00010	.04660	.39700	.00040	.00310	-.00320	-.10200	.65200	.00000
.200	9.990	.41640	-.01260	.04920	.41920	-.01123	.00690	-.00930	-.19200	.66500	.00000
.200	15.030	.43570	-.02950	.03320	.43690	-.00906	.00230	-.00840	-.24500	.67500	.00000
.200	20.020	.43100	-.04580	.06550	.43600	.00361	-.01000	-.00190	-.29600	.69000	.00000
GRADIENT	-.00076	-.00076	-.00076	-.00030	-.00062	-.00019	.00096	-.00126	-.01940	-.00076	.00000

PARAMETRIC DATA

ALPHA = 9.000 ELEVON = .000
 AILERON = .000 RUDDER = .000
 SPOBRK = .000

DATE 20 JAN 75

TABULATED SOURCE DATA - OA123

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OA123 B29C9 M7 N20M16E43V8R5TC3

(RFAD011) (27 JAN 75)

REFERENCE DATA

MREF = 2000.0000 36-FT. XREF = 1076.6000 INCHES
 LREF = 474.8100 INCHES YREF = .0000 INCHES
 BREF = 938.6000 INCHES ZREF = 375.0000 INCHES
 SCALE = .0405 SCALE

RUN NO. 11/0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

PARAMETRIC DATA

ALPHA = 12.000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPDRK = .000

MACH	BETA	CL	CDF	CLM	CN	CAF	CYN	CBL	CY	KCP/L	CAB
.280	-20.010	.8930	.1310	-.0690	.6360	-.00711	.01260	-.01700	.25700	.69100	.00000
.280	-15.030	.8370	.0940	-.0250	.6420	-.04275	.00350	-.01550	.24300	.66000	.00000
.280	-10.000	.8290	.0970	-.02070	.63370	-.03819	-.00800	.01860	.17900	.66400	.00000
.280	-5.020	.8140	.0990	-.00820	.62190	-.03294	-.03860	.01330	.09200	.65500	.00000
.280	-2.520	.8120	.10170	-.00410	.62030	-.03014	-.07490	.00760	.04300	.65400	.00000
.280	-.030	.8030	.10230	-.00040	.61740	-.02863	-.00010	.00450	-.00800	.65200	.00000
.280	2.500	.80590	.09800	.00000	.61690	-.03317	.03260	.00020	-.05800	.65200	.00000
.280	5.000	.81510	.09550	-.00390	.62140	-.03669	.00570	-.00590	-.10100	.65400	.00000
.280	10.000	.83960	.09340	-.02210	.64690	-.04411	.00900	-.01570	-.19000	.66400	.00000
.280	15.020	.84540	.10090	-.03470	.65310	-.03816	-.00170	-.01750	-.23900	.67100	.00000
.280	20.030	.84330	.12140	-.06340	.65440	-.01742	-.01530	-.01130	-.27700	.68700	.00000
GRADIENT		-.00009	-.00045	.00035	-.00016	-.00042	.00144	-.00183	-.01935	-.00016	.00000

REFERENCE DATA

MREF = 2000.0000 36-FT. XREF = 1076.6000 INCHES
 LREF = 474.8100 INCHES YREF = .0000 INCHES
 BREF = 938.6000 INCHES ZREF = 375.0000 INCHES
 SCALE = .0405 SCALE

RUN NO. 12/0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

PARAMETRIC DATA

ALPHA = 16.000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPDRK = .000

MACH	BETA	CL	CDF	CLM	CN	CAF	CYN	CBL	CY	KCP/L	CAB
.280	-19.990	.84900	.21750	-.06220	.87600	-.02941	.02240	.02270	.24900	.68600	.00000
.280	-15.020	.85930	.18400	-.04100	.87530	-.08423	.00840	.02390	.23400	.66900	.00000
.280	-9.990	.84410	.18830	-.02930	.86250	-.05731	-.00340	.02710	.17000	.66400	.00000
.280	-5.030	.83290	.19170	-.01410	.85330	-.04948	-.00500	.01770	.09000	.65800	.00000
.280	-2.510	.83610	.19390	-.01410	.85990	-.04891	.00150	.01140	.03300	.65800	.00000
.280	-.010	.84470	.18290	-.00790	.86210	-.06138	-.00070	.00400	-.00400	.65500	.00000
.280	2.470	.84450	.18050	-.00730	.86120	-.06359	.00180	-.00170	-.03200	.65500	.00000
.280	4.990	.83720	.17930	-.00930	.85330	-.06267	.00480	-.01080	-.09600	.65600	.00000
.280	10.010	.84840	.18070	-.02960	.86500	-.06454	.00460	-.02440	-.18200	.66400	.00000
.280	15.000	.86710	.18320	-.04730	.88370	-.06740	-.00300	-.02400	-.24300	.67100	.00000
.280	20.020	.86190	.21360	-.08440	.88720	-.03862	-.02430	-.01890	-.26300	.68700	.00000
GRADIENT		.00060	-.00153	.00086	.00014	-.00164	.00080	-.00280	-.01827	-.00028	.00000

(RFAD012) (27 JAN 75)

DATE 20 JAN 78 TABULATED SOURCE DATA - CA183

CA123 829C9 M7 N20M16E43V083TC3 +BU65

(NFA013) (27 JAN 75)

REFERENCE DATA

WREF = 2000.0300 20.FT. XREF = 1076.0000 INCHES
 LREF = 474.0100 INCHES YREF = .0000 INCHES
 BREF = 936.0000 INCHES ZREF = 375.0000 INCHES
 SCALE = .0403 SCALE

RUN NO. 13/ 0 RN/L = 1.42 GRADIENT INTERVAL = -6.00/ 6.00

MACH	ALPHA	CL	CD	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	.000	-.02670	-.04660	.01080	-.02670	.04660	-.00250	-.00250	.00200	.00000	.00000
.200	4.040	.16000	-.04880	.01420	.16300	.03742	.00060	.00610	-.00900	.61900	.00000
.200	8.180	.30510	.06310	.01060	.37040	.01086	-.00100	.00420	-.00300	.8-100	.00000
.200	12.200	.57420	.09950	.01060	.56250	-.02412	-.00180	.00260	.00000	.64500	.00000
.200	16.270	.79650	.16930	.01000	.61200	-.05069	-.00320	.00060	.00300	.64700	.00000
GRADIENT		.04821	.00050	.00084	.04696	-.00252	.00077	.00094	-.00272	-.04480	.00000

BETA = .000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPDRK = .000

PARAMETRIC DATA

REFERENCE DATA

WREF = 2000.0300 20.FT. XREF = 1076.0000 INCHES
 LREF = 474.0100 INCHES YREF = .0000 INCHES
 BREF = 936.0000 INCHES ZREF = 375.0000 INCHES
 SCALE = .0403 SCALE

RUN NO. 15/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	ALPHA	CL	CD	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-2.070	-.10260	-.05750	.06530	-.10770	.05083	.00070	.00020	.00000	.78000	.05280
.200	-.030	-.00050	.05120	.06750	-.08880	.05114	.00270	.00290	-.00900	.93200	.05208
.200	1.990	.00740	.04720	.07030	.00900	.04894	.00400	.00510	-.01500	-2.19500	.03075
.200	4.010	.10130	.04710	.07250	.10430	.03993	.00510	.00710	-.02000	.39800	.04891
.200	6.050	.20170	.05050	.07240	.20590	.02883	.00560	.00760	-.02200	.52200	.04758
.200	8.090	.30660	.05900	.07090	.31150	.01527	.00480	.00610	-.01800	.56600	.04548
.200	10.120	.41090	.07170	.07200	.41700	-.00152	.00360	.00460	-.01500	.58600	.04593
.200	12.170	.52160	.09310	.07160	.52970	-.01897	.00300	.00410	-.01300	.60200	.04648
.200	14.210	.64180	.12510	.06750	.65290	-.03622	.00190	.00270	-.01000	.61400	.04885
.200	16.240	.79420	.16900	.06590	.77110	-.04980	.00140	.00350	-.00800	.62730	.05143
.200	18.290	.95150	.23170	.06270	.86120	-.04710	.00200	.00500	-.00900	.62500	.05544
GRADIENT		.04780	-.00174	.00120	.04801	-.00162	.00071	.00113	-.00325	-.21807	-.00088

BETA = .000 BOFLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPDRK = 40.000

PARAMETRIC DATA

(NFA015) (27 JAN 75)

Q1123 B50CF8M6N28W16E43V8R5 X8

RFAD18) (27 JAN 75)

REFERENCE DATA

WARP = 2809.8300 Sq. FT. XMRP = 1076.6800 INCHES
 LWRP = 474.8100 INCHES YMRP = .0000 INCHES
 BRWP = 936.8800 INCHES ZMRP = 373.0000 INCHES
 SCALE = .0405 SCALE

PARAMETRIC DATA

ALPHA = .000 BOFLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPOBRK = 40.000

RUN NO. 16/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.280	-20.030	-.07090	.02280	.00220	-.00880	.00228	-.01810	.00070	.33100	1.59300	.07187
.280	-19.040	-.02800	.03770	.01660	-.02810	.01659	-.01840	.01240	.25500	1.14700	.08175
.280	-10.030	-.05950	.04020	.04020	-.05960	.04024	-.01500	.01210	.17200	.96300	.03972
.280	-5.030	-.08010	.05050	.05980	-.08010	.05044	-.00630	.00960	.07700	.92600	.03480
.280	-2.500	-.08350	.05250	.06260	-.08350	.05252	-.00230	.00680	.03200	.92800	.03421
.280	-.020	-.08870	.05330	.06640	-.08880	.05324	.00010	.00220	-.00400	.92700	.03164
.280	2.480	-.08540	.05360	.06430	-.08550	.05356	.00150	-.00060	-.04200	.92900	.03190
.280	5.010	-.07820	.04940	.05960	-.07820	.04940	.00350	-.00300	-.08800	.93200	.03274
.280	10.010	-.05250	.03970	.04660	-.05250	.03975	.01730	-.00750	-.18500	.99400	.05602
.280	15.020	-.02420	.02530	.02870	-.02420	.02555	.02240	-.00860	-.28700	1.09800	.05990
.280	20.040	-.00850	.00890	.01470	-.00850	.00895	.01990	.00750	-.34900	1.28300	.07061
GRADIENT	.00007	.00004	.00005	.00007	.00007	.00004	.00109	-.00130	-.01612	.00292	-.00026

Q1123 B50CF8M6N28W16E43V8R5 X8

RFAD17) (27 JAN 75)

REFERENCE DATA

WARP = 2809.8300 Sq. FT. XMRP = 1076.6800 INCHES
 LWRP = 474.8100 INCHES YMRP = .0000 INCHES
 BRWP = 936.8800 INCHES ZMRP = 373.0000 INCHES
 SCALE = .0405 SCALE

PARAMETRIC DATA

ALPHA = 4.000 BOFLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPOBRK = 40.000

RUN NO. 17/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.280	-20.020	.17490	.00870	.00870	.17510	-.00359	-.01990	.01090	.32900	.59800	.07147
.280	-19.030	.16310	.01440	.04260	.16360	.00294	-.02220	.01590	.27600	.55600	.06029
.280	-10.020	.13910	.03670	.03670	.13750	.02716	-.01600	.01620	.17500	.51500	.02553
.280	-5.030	.10480	.04400	.04400	.10750	.03669	-.00890	.00670	.08100	.41500	.03205
.280	-2.500	.10060	.04560	.04560	.10350	.03653	-.00260	.00640	.03600	.40700	.03224
.280	.000	.05970	.04950	.04950	.10290	.04241	.00180	.00570	-.01400	.39700	.04918
.280	2.480	.10000	.04890	.04890	.10920	.04137	.00350	.00190	-.03500	.42000	.04858
.280	5.010	.11480	.04550	.04550	.11770	.03715	.00760	-.00250	-.10000	.44700	.14250
.280	10.010	.13090	.03640	.03640	.14110	.02655	.01960	-.01010	-.19400	.51200	.05399
.280	15.030	.16970	.02270	.02270	.17090	.01077	.02690	-.01350	-.27700	.58100	.05812
.280	20.040	.17820	.01590	.01590	.17690	.00346	.01930	-.02410	-.34400	.61100	.06824
GRADIENT	.00103	.00024	.00006	.00004	.00104	.00015	.00158	-.00091	-.01888	.00227	-.00033

04123 850C9F8M416E43V8RS X0

(RFA019) (27 JAN 75)

REFERENCE DATA

SREF = 2899.8300 36.17. XREF = 1076.8600 INCHES
 LREF = 474.8100 INCHES YREF = .0000 INCHES
 BREF = 938.8600 INCHES ZREF = 373.0000 INCHES
 SCALE = .0403 SCALE

RUN NO. 18 / 0 RM/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

PARAMETRIC DATA

ALPHA = 9.000 BDFLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPOBRK = 40.000

MACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.800	-20.080	.38360	.03190	.02750	.38880	-.02000	-.02390	.02170	.32900	.62400	.07025
.840	-19.020	.36380	.03110	.04600	.36450	-.02055	-.02540	.02140	.27900	.60500	.05949
.880	-10.000	.32750	.04390	.03730	.33050	-.00267	-.02170	.01550	.19700	.58800	.03455
.920	-9.030	.31830	.03520	.06160	.32290	.00991	-.01120	.00850	.09600	.56100	.05044
.960	-2.500	.31320	.05880	.06830	.31830	.01412	-.00470	.00590	.04200	.57500	.04821
.980	-.020	.30840	.06120	.07100	.31400	.01721	.00020	.00330	-.00800	.56800	.04674
1.000	1.470	.30830	.05810	.07090	.31340	.01421	.00470	.00060	-.03700	.56800	.04621
.800	10.000	.31280	.05400	.08730	.31730	.00950	.00570	-.00460	-.10700	.57400	.04769
.840	10.000	.33490	.04500	.03700	.33790	-.00260	.02200	-.01360	-.20100	.58900	.05323
.880	19.030	.36160	.04000	.03940	.36370	-.01136	.02670	-.02080	-.27900	.61200	.05752
.920	20.040	.36720	.03620	.02640	.36880	-.01504	.02020	-.01690	-.34200	.62500	.06712
GRADIENT	-.00063	-.00012	.00064	-.00064	-.00064	-.00003	.00204	-.00126	-.02014	-.00084	-.00030

04123 850C9F8M416E43V8RS X0

(RFA019) (27 JAN 75)

REFERENCE DATA

SREF = 2899.8300 36.17. XREF = 1076.8600 INCHES
 LREF = 474.8100 INCHES YREF = .0000 INCHES
 BREF = 938.8600 INCHES ZREF = 373.0000 INCHES
 SCALE = .0403 SCALE

PARAMETRIC DATA

ALPHA = 12.000 BDFLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPOBRK = 40.000

RUN NO. 19 / 0 RM/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.800	-20.020	.57680	.08340	.08340	.58340	-.04056	-.02150	.03000	.31900	.63900	.07500
.840	-19.030	.58590	.07040	.04860	.58600	-.05056	-.02500	.02370	.28600	.68000	.08149
.880	-10.020	.53140	.08300	.05200	.53650	-.03508	-.02240	.02130	.19500	.61700	.05559
.920	-9.030	.53520	.09090	.06450	.54230	-.02369	-.01750	.01080	.09500	.60800	.04816
.960	-2.510	.53020	.09310	.06990	.53840	-.01876	-.00570	.00550	.04300	.60500	.04802
.980	-.010	.52390	.09470	.09470	.53210	-.01777	.00040	.00220	-.00700	.60100	.04663
1.000	2.490	.52370	.09210	.07340	.53140	-.02034	.00620	-.00140	-.05900	.60100	.04585
.800	10.010	.52990	.08980	.08680	.53610	-.02794	.01300	-.00640	-.10900	.60400	.04749
.840	10.020	.54790	.08190	.05450	.52880	-.03347	.02150	-.02020	-.20100	.61500	.05358
.880	19.020	.56600	.07960	.03960	.52100	-.04176	.02650	-.02640	-.28500	.62700	.05932
.920	20.040	.57270	.08370	.02270	.57740	-.03902	.01720	-.02550	-.33200	.63700	.07048
GRADIENT	-.00046	-.00054	.00032	-.00077	-.00077	-.00059	.00251	-.00165	-.02033	-.00048	-.00015

CM123 820C9F0M16E28M116E43V0R5 X9

(RFAD020) (27 JAN 75)

REFERENCE DATA

REF = 2000.0300 30. FT. XGRP = 1076.0000 INCHES
 LREF = 474.0100 INCHES YGRP = .0000 INCHES
 BREF = 938.0000 INCHES ZGRP = 375.0000 INCHES
 SCALE = .0403 SCALE

PARAMETRIC DATA

ALPHA = 16.000 BDFLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPOBRK = 40.000

RUN NO. 20/ 0 RN/L = 1.05 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-20.010	.76200	.01370	.16630	.79810	-.05961	-.01780	.03480	.32000	.64500	.07615
.200	-15.030	.76750	.09610	.15260	.79670	-.07407	-.02330	.03190	.26200	.63500	.06536
.200	-10.000	.77030	.04970	.16700	.76440	-.05402	-.02160	.02950	.19400	.62800	.05594
.200	-5.020	.77300	.06210	.17470	.77370	-.04363	-.00980	.01720	.09100	.62200	.05081
.200	-2.490	.77500	.06500	.17580	.77560	-.04510	-.00420	.00940	.04100	.62100	.05249
.200	-.010	.77690	.06720	.17190	.77670	-.04741	.00090	.00290	-.00600	.62000	.05222
.200	2.500	.78160	.06680	.17170	.77930	-.04840	.00600	-.00310	-.05500	.62000	.04965
.200	5.010	.77590	.06440	.17210	.77370	-.04697	.00900	-.01150	-.05700	.62100	.04953
.200	10.010	.76420	.04650	.16780	.76060	-.05285	.02060	-.02960	-.19800	.63000	.05375
.200	15.030	.76620	.02700	.16320	.80240	-.06356	.02620	-.03460	-.26900	.63900	.06322
.200	20.040	.76570	.01250	.16910	.80370	-.05775	.01490	-.02820	-.33700	.64600	.07307
GRADIENT	.00041	-.00029	.00026	.00031	.00040	-.00040	.00191	-.00279	-.01884	-.00012	-.00022

CM123 820C9F0M16E28M116E43V0R5 X9

(RFAD021) (27 JAN 75)

REFERENCE DATA

REF = 2000.0300 30. FT. XGRP = 1076.0000 INCHES
 LREF = 474.0100 INCHES YGRP = .0000 INCHES
 BREF = 938.0000 INCHES ZGRP = 375.0000 INCHES
 SCALE = .0403 SCALE

PARAMETRIC DATA

BETA = .000 BDFLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPOBRK = 40.000

RUN NO. 21/ 0 RN/L = 1.05 GRADIENT INTERVAL = -6.00/ 6.00

MACH	ALPHA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-20.030	-.17420	.05840	.06330	-.17640	.05703	.00010	.00320	-.00900	.77300	.11511
.200	-15.030	-.09350	.06710	.05270	-.09360	.05276	.00000	.00270	-.00500	.91806	.05344
.200	-10.000	.00060	.07000	.04860	.00230	.04656	.00110	.00310	-.01100	-10.35400	.05216
.200	-5.020	.09690	.07230	.04810	.10010	.04123	.00200	.00650	-.01500	.38600	.05016
.200	0.060	.19590	.07300	.05260	.20040	.03169	.00150	.00560	-.01400	.51800	.04761
.200	5.100	.30470	.07180	.06070	.31020	.01712	.00100	.00460	-.01200	.56600	.04598
.200	10.140	.40970	.07340	.07270	.41610	-.00037	.00140	.00450	-.01300	.58700	.04588
.200	12.180	.52200	.07300	.09410	.53010	-.01814	.00100	.00360	-.01100	.60100	.04707
.200	14.220	.64070	.07010	.12380	.63150	-.03735	.00010	.00210	-.00800	.61200	.04945
.200	16.240	.75410	.06670	.16010	.77110	-.04657	.00040	.00360	-.00700	.61900	.05227
.200	18.290	.85110	.06610	.23250	.88110	-.04640	.00110	.00310	-.00800	.62400	.05688
GRADIENT	.04488	-.00246	.00221	.00246	.04377	-.00255	.00034	.00031	-.00119	-.61151	-.00080

DATE 29 JAN 75 TABULATED SOURCE DATA - Q123

Q123 B26C9F8M6N28M16E43V8R5 X9

(RFA022) (27 JAN 75)

REFERENCE DATA

SRP = 2669.8300 36.FT. XMRP = 1076.6600 INCHES
 LMRP = 474.8100 INCHES YMRP = .0000 INCHES
 BMRP = 936.6600 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

ALPHA = .000 BDFLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPD8RK = 40.000

RUN NO. 22/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CDP	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.260	-20.020	-.01360	-.01390	.04120	-.01380	-.01397	-.00970	-.00260	.33100	1.76100	.07209
.280	-19.010	-.03140	-.01770	.03920	-.03140	-.01776	-.01570	.01160	.25400	1.11100	.06177
.280	-9.990	-.00230	.04120	.05080	-.06250	.04125	-.01450	.01220	.17000	.95100	.05630
.280	-5.010	-.08140	.05110	.05980	-.08140	.05113	-.00570	.01030	.07400	.92300	.05908
.280	-2.320	-.06190	.05350	.06270	-.08200	.05350	-.00090	.00910	.02400	.93300	.05459
.280	-.020	-.09280	.05270	.06670	-.08260	.05266	.00000	.00230	-.00400	.91700	.05367
.280	2.480	-.06730	.05400	.06560	-.08970	.05403	.00030	-.00090	-.04000	.92100	.05321
.280	9.010	-.08030	.04950	.06040	-.08030	.04954	.00540	-.00290	-.08800	.92800	.05312
.280	10.000	-.03520	.03910	.04990	-.05520	.03908	.01740	-.00750	-.18600	.98400	.05630
.280	15.030	-.02730	.02350	.03030	-.02730	.02354	.02140	-.00810	-.26600	1.06000	.06064
.280	20.040	-.01590	.00910	.01640	-.01190	.00916	.01830	-.00750	-.34600	1.15600	.07061
GRADIENT		-.00022	-.00011	.00015	-.00022	-.00011	.00093	-.00145	-.01548	-.00508	-.00021

REFERENCE DATA

SRP = 2669.8300 36.FT. XMRP = 1076.6600 INCHES
 LMRP = 474.8100 INCHES YMRP = .0000 INCHES
 BMRP = 936.6600 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

RUN NO. 23/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CDP	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.260	-20.010	.17280	-.00030	.03550	.17230	-.01255	-.01540	.00930	.38900	.57600	.07116
.280	-19.000	.15970	.01360	.04400	.16020	.00260	-.02130	.01310	.26900	.53000	.06081
.280	-10.000	.13410	.03700	.03230	.13640	.02756	-.01540	.01610	.17400	.51000	.05306
.280	-5.010	.10230	.04320	.06790	.10320	.03990	-.00880	.00690	.09100	.41400	.05284
.280	-2.510	.09820	.04540	.07060	.10120	.03848	-.00240	.00700	.03400	.39500	.05233
.280	-.010	.09540	.04940	.07230	.09870	.04856	.00130	.00320	-.01100	.38100	.04961
.280	2.480	.10160	.04910	.07030	.10300	.04184	.00250	.00080	-.03300	.40500	.05013
.280	9.020	.11230	.04410	.06700	.11530	.03610	.00810	-.00240	-.10200	.43600	.05101
.280	10.030	.13770	.03600	.05400	.13950	.02622	.02010	-.01010	-.19500	.51000	.05480
.280	15.020	.16760	.02120	.03400	.16890	.00935	.02660	-.01260	-.26000	.57700	.05980
.280	20.040	.17320	.01480	.02130	.17360	.00259	.01850	-.00440	-.34300	.60600	.06925
GRADIENT		.00094	.00022	-.00009	.00096	.00015	.00154	-.00099	-.01667	-.00232	-.00023

(RFA023) (27 JAN 75)

PARAMETRIC DATA

ALPHA = 4.000 BDFLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPD8RK = 40.000

Q123 B26C9F8M6N28M16E43V8R5 X9

QAI23 B26C9F8H16E43V8R5 X9

(RFA024) (27 JAN 75)

REFERENCE DATA

MACH = 2.00-2.00 30. FT. XREF = 1076.0000 INCHES
 LREF = 474.8100 INCHES YREF = .0000 INCHES
 BREF = 938.0000 INCHES ZREF = 375.0000 INCHES
 SCALE = .0405 SCALE

RUN NO. 24/ 0 RN/L = 1.05 GRADIENT INTERVAL = -6.00/ 6.00

PARAMETRIC DATA

ALPHA = 0.000 BDFLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPDBRK = 40.000

MACH	BETA	CL	CDP	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-20.010	.36320	.02210	.03720	.36270	-.02943	-.01980	.02020	.32800	.61400	.07137
.200	-15.020	.36060	.03030	.04870	.36150	-.02069	-.02450	.02050	.27700	.60400	.05997
.200	-10.000	.32940	.04380	.05730	.33220	-.00308	-.02090	.01590	.19500	.58800	.05563
.200	-5.020	.31740	.05440	.06300	.32190	.00909	-.01070	.00880	.09400	.58000	.05108
.200	-2.490	.31210	.05870	.06710	.31720	.01413	-.00420	.00610	.04100	.57400	.04861
.200	-.010	.30750	.06090	.07100	.31260	.01702	.00090	.00400	-.01100	.56800	.04634
.200	2.500	.30730	.05900	.07150	.31270	.01511	.00500	.00050	-.05900	.56700	.04600
.200	5.010	.31290	.05370	.06610	.31740	.00913	.01010	-.00430	-.10900	.57300	.04810
.200	10.020	.33360	.04440	.05800	.33660	-.00305	.02250	-.01370	-.20400	.58800	.05431
.200	15.030	.36310	.03930	.03800	.36700	-.01268	.02750	-.01940	-.28350	.61400	.05950
.200	20.030	.36330	.03460	.02760	.36670	-.01734	.01870	-.01620	-.33800	.62400	.07071
GRADIENT	-.00054	-.00004	-.00004	.00056	-.00054	.00004	.00203	-.00127	-.02020	-.00084	-.00034

QAI23 B26C9F8H16E43V8R5 X9

(RFA025) (27 JAN 75)

REFERENCE DATA

MACH = 2.00-2.00 30. FT. XREF = 1076.0000 INCHES
 LREF = 474.8100 INCHES YREF = .0000 INCHES
 BREF = 938.0000 INCHES ZREF = 375.0000 INCHES
 SCALE = .0405 SCALE

RUN NO. 25/ 0 RN/L = 1.05 GRADIENT INTERVAL = -6.00/ 6.00

PARAMETRIC DATA

ALPHA = 12.000 BDFLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPDBRK = 40.000

MACH	BETA	CL	CDP	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-20.000	.57410	.07250	.03040	.57640	-.05055	-.01690	.02890	.31600	.63200	.07596
.200	-15.030	.56370	.06880	.04930	.56530	-.03159	-.02390	.02610	.28200	.62000	.06229
.200	-10.010	.53150	.08280	.05230	.53650	-.03542	-.02140	.02140	.19300	.61700	.05631
.200	-5.020	.53510	.09080	.06490	.54230	-.02401	-.01200	.01090	.09300	.60800	.04921
.200	.000	.52200	.09580	.07290	.53040	-.01659	.00050	.00270	-.00900	.60100	.04683
.200	2.490	.52440	.09360	.07180	.53240	-.01885	.00620	-.00110	-.05900	.60200	.04575
.200	5.000	.53240	.08830	.06890	.53900	-.02591	.01220	-.00660	-.10800	.60800	.04784
.200	10.010	.53360	.08240	.05130	.53870	-.03631	.02190	-.01940	-.20300	.61800	.05558
.200	15.030	.56630	.07740	.03910	.57200	-.04434	.02650	-.02650	-.29100	.62800	.06218
.200	20.040	.56960	.06140	.02530	.57390	-.04072	.01720	-.02490	-.33300	.63500	.07369
GRADIENT	-.00043	-.00015	-.00015	.00031	-.00047	-.00008	.00241	-.00171	-.02009	-.00029	-.00009

DATE 20 JAN 75

TABULATED SOURCE DATA - 0A123

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0A123 B26C9F0M10N20M10E23V0R5 X9

(RFAD28) (27 JAN 75)

REFERENCE DATA

SHIP = 2000.0300 36-FT. XMRP = 1076.0000 INCHES
 LRP = 474.0100 INCHES YMRP = .0000 INCHES
 BRP = 936.0000 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

PARAMETRIC DATA

ALPHA = 16.000 30FLAP = -12.000
 ELEVON = .000 AILRON = .000
 RUDDER = .000 SPOBRK = 40.000

RUN NO. 28/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

WACH	BETA	CL	CLM	CLN	CAF	CYN	CBL	CY	XCP/L	CAB
.280	-20.010	.76350	.01800	.76670	-.06663	-.01560	-.03320	.32100	.64300	.07977
.280	-15.030	.76720	.01730	.76930	-.07444	-.02240	-.03140	.27900	.63400	.06663
.280	-10.030	.76700	.04930	.76360	-.03266	-.02080	-.02990	.19200	.62800	.05982
.280	-5.020	.73350	.08310	.77230	-.04317	-.00900	-.01770	.08900	.62200	.05102
.280	-2.490	.75610	.06690	.77440	-.04523	-.00410	-.00970	.04100	.62000	.05346
.280	-.020	.76670	.06930	.77630	-.04806	.00090	-.00360	-.00700	.61900	.05299
.280	2.490	.76000	.07110	.77750	-.04850	.00630	-.00220	-.05600	.61900	.05000
.280	5.010	.75980	.07160	.77740	-.04787	.00910	-.01100	-.09900	.62100	.04963
.280	10.020	.76620	.06420	.76410	-.05433	.02180	-.02910	-.20200	.63000	.05343
.280	15.040	.76630	.02790	.80010	-.06495	.02600	-.03430	-.28900	.63900	.06366
.280	20.030	.76760	.01190	.80290	-.06021	.01550	-.02700	-.34000	.64000	.07648
.280	GRADIENT	.00066	-.00034	.00053	-.00031	.00186	-.00277	-.01889	-.00012	-.00025

0A123 B26C9 M8 W10E23V0R5TC4X9

(RFAD27) (27 JAN 75)

REFERENCE DATA

SHIP = 2000.0300 36-FT. XMRP = 1076.0000 INCHES
 LRP = 474.0100 INCHES YMRP = .0000 INCHES
 BRP = 936.0000 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

PARAMETRIC DATA

BETA = .000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPOBRK = 40.000

RUN NO. 27/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

WACH	ALPHA	CL	CLM	CLN	CAF	CYN	CBL	CY	XCP/L	CAB
.280	2.020	.08210	.05080	.06410	-.05437	-.00030	.00330	-.00300	.54100	.00000
.280	4.040	.15520	.05620	.15300	-.04714	.00080	.00490	-.01000	.59800	.00000
.280	6.120	.30460	.07340	.37130	.02116	-.00030	.00350	-.00600	.62600	.00000
.280	12.150	.46620	.08870	.47650	.00475	-.00040	.00260	-.00300	.63000	.00000
.280	18.180	.57600	.11250	.50960	-.01200	-.00120	.00170	-.00200	.63300	.00000
.280	14.240	.70170	.14760	.71650	-.02955	-.00170	.00030	-.00000	.64000	.00000
.280	16.290	.81440	.19760	.83720	-.03661	-.00050	.00220	-.00100	.64000	.00000
.280	18.320	.91020	.27060	.94920	-.02933	.00120	.00360	-.00400	.64000	.00000
.280	GRADIENT	.04609	.00079	.04696	-.00036	.00045	.00079	-.00248	.02325	.00000

CA123 B26C9 M16 M10E43V0R5TC4X9

(RFA028) (27 JAN 75)

REFERENCE DATA

REF = 2000.0000 50. FT. XMRP = 1076.0000 INCHES
 LREF = 474.0100 INCHES YMRP = .0000 INCHES
 BREF = 936.0000 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

PARAMETRIC DATA

ALPHA = .000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPDRK = 40.000

RUN NO. 29/0 RN/L = 1.05 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.20	-19.940	.01770	.03070	.03069	.01770	.03069	-.00990	-.00220	.32100	.80400	.00000
.20	-15.020	.01470	.03160	.03161	.01470	.03161	-.01030	.01110	.25000	.71200	.00000
.20	-9.990	.00120	.04880	.04883	.00120	.04883	-.01140	.01360	.17100	2.47700	.00000
.20	-2.510	-.0140	.06200	.06202	-.01740	.06202	-.00110	.00830	.02800	.75400	.00030
.20	-.040	-.02770	.07020	.07023	-.02770	.07023	-.00150	.00320	-.00300	.79900	.05000
.20	2.490	-.02370	.06150	.06156	-.02370	.06156	-.00240	.00010	-.03900	.79200	.00000
.20	5.010	-.01440	.03740	.03749	-.01440	.03749	.00020	-.00280	-.08100	.78700	.00000
.20	10.010	.01140	.04570	.04578	.01150	.04578	.01180	-.00890	-.18000	.87600	.00000
.20	15.040	.02290	.03920	.03926	.02290	.03926	.01270	-.00750	-.23500	.86700	.00000
.20	20.030	.02350	.03870	.03876	.02350	.03876	.01230	.00880	-.34000	.99000	.00000
.20	GRADIENT	.00053	-.00054	-.00053	.00053	-.00053	.00012	-.00145	-.01447	.00364	.00000

CA123 B26C9 M16 M10E43V0R5TC4X9

(RFA029) (27 JAN 75)

REFERENCE DATA

REF = 2000.0000 50. FT. XMRP = 1076.0000 INCHES
 LREF = 474.0100 INCHES YMRP = .0000 INCHES
 BREF = 936.0000 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

PARAMETRIC DATA

ALPHA = 4.000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPDRK = 40.000

RUN NO. 29/0 RN/L = 1.05 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.20	-20.000	.21110	.02290	.02290	.21210	.00757	-.00770	.00370	.33200	.64500	.00000
.20	-14.990	.21080	.03100	.03100	.21220	.01804	-.01390	.01400	.26200	.63200	.00000
.20	-9.980	.19400	.04980	.04980	.19700	.03373	-.01080	.01680	.17200	.65000	.00000
.20	-5.000	.16860	.05550	.05550	.17010	.04369	-.00690	.00780	.09000	.61800	.00000
.20	-2.490	.16030	.05620	.05620	.16400	.04672	-.00150	.00680	.03500	.60500	.00000
.20	-.020	.15730	.05950	.05950	.16110	.04924	.00000	.00600	-.01000	.59500	.00000
.20	2.470	.16310	.05800	.05800	.16800	.04826	-.00250	.00170	-.04800	.60600	.00000
.20	5.000	.17620	.05460	.05460	.17970	.04209	.00270	-.00180	-.09300	.61800	.00000
.20	10.010	.19820	.04660	.04660	.20100	.03253	.01260	-.01070	-.18600	.64900	.00000
.20	15.020	.21790	.03900	.03900	.22020	.02345	.01630	-.01230	-.26600	.67000	.00000
.20	20.030	.21430	.04910	.04910	.21730	.03385	.01000	-.01190	-.32900	.69100	.00000
.20	GRADIENT	.00096	-.00008	-.00008	.00096	-.00015	.00081	-.00097	-.01799	.00005	.00000

DATE 26 JAN 79 TABULATED SOURCE DATA - ON123

(RFA030) (27 JAN 75)

ON123 B26C9 M16 M10E43V8R5TC4X9

PARAMETRIC DATA

ALPHA = 8.000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPDRK = 40.000

REFERENCE DATA

REF = 2689.8300 56.17. XMRP = 1078.6000 INCHES
 LREF = 474.8100 INCHES YMRP = .0000 INCHES
 BREF = 936.6000 INCHES ZMRP = 373.0000 INCHES
 SCALE = .0403 SCALE

RUN NO. 30/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

WACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.240	-20.000	.40240	-.01270	.06180	.40710	.00397	-.01360	.01920	.32000	.66300	.00000
.240	-19.010	.41220	.00080	.03310	.41580	-.00562	-.01550	.02000	.26700	.65100	.00000
.240	-18.000	.38520	.01010	.08220	.39010	.00712	-.01560	.01710	.19000	.64200	.00000
.240	-17.010	.37270	.01660	.07240	.38220	.01856	-.02680	.00960	.08600	.63600	.00000
.240	-16.000	.37160	.02140	.07420	.37840	.02096	-.02260	.00720	.03700	.63100	.00000
.240	-15.010	.36960	.02450	.07500	.37260	.02262	-.02120	.00400	-.00700	.62700	.00000
.240	-14.000	.36530	.02530	.07260	.37190	.02028	-.02010	.00070	-.03000	.62700	.00000
.240	-13.010	.36930	.02320	.06890	.37530	.01600	-.00340	-.00440	-.09700	.62900	.00000
.240	-12.010	.39320	.00930	.06170	.39800	.00543	-.01460	-.01830	-.19400	.64300	.00000
.240	-11.020	.41820	-.00990	.06190	.42270	.00209	-.01730	-.01630	-.27200	.66000	.00000
.240	-10.040	.40860	-.02280	.07170	.41260	.00348	-.00950	-.01480	-.32500	.67200	.00000
.240	GRADIENT	-.00076	.00066	-.00034	-.00081	-.00023	-.00092	-.00136	-.01826	-.00072	.00000

(RFA031) (27 JAN 75)

ON123 B26C9 M16 M10E43V8R5TC4X9

PARAMETRIC DATA

ALPHA = 12.000 ELEVON = .000
 AILRON = .000 RUDDER = .000
 SPDRK = 40.000

REFERENCE DATA

REF = 2689.8300 56.17. XMRP = 1078.6000 INCHES
 LREF = 474.8100 INCHES YMRP = .0000 INCHES
 BREF = 936.6000 INCHES ZMRP = 373.0000 INCHES
 SCALE = .0403 SCALE

RUN NO. 31/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

WACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.240	-20.010	.41930	-.02870	.11930	.63080	-.01409	-.01090	.02800	.30900	.66600	.00000
.240	-19.010	.42030	-.00400	.10030	.62730	-.03269	-.01370	.02430	.27100	.65400	.00000
.240	-18.010	.40820	.00600	.10690	.61530	-.02162	-.01540	.02240	.18600	.64800	.00000
.240	-17.020	.39100	.02150	.11220	.60140	-.01318	-.00940	.01170	.09000	.63800	.00000
.240	-16.000	.38740	.02200	.11480	.59640	-.01187	-.00480	.00600	.04200	.63600	.00000
.240	-15.010	.38290	.02630	.11420	.59390	-.01147	-.00110	.00260	-.00500	.63500	.00000
.240	-14.000	.38290	.02560	.11240	.59310	-.01311	.00100	-.00200	-.04900	.63600	.00000
.240	-13.010	.38630	.02330	.10810	.59610	-.01819	.00570	-.00670	-.19100	.63700	.00000
.240	-12.020	.41160	.00530	.10790	.62080	-.02377	.01270	-.02000	-.19100	.64800	.00000
.240	-11.030	.42990	-.01470	.16790	.63730	-.02769	.01500	-.02640	-.18700	.66000	.00000
.240	-10.050	.41200	-.03530	.12760	.62520	-.00482	.00450	-.02360	-.31000	.67200	.00000
.240	GRADIENT	-.00033	.00029	-.00042	-.00063	-.00029	.00136	-.00179	-.01856	-.00016	.00000

CA123 826C9 M86 M416E43V8R5TC6X9

(RFA036) (27 JAN 75)

REFERENCE DATA

MACH = 2499.8300 50.FT. XMRP = 1078.8000 INCHES
LREF = 474.8100 INCHES YMRP = .0000 INCHES
BREF = 938.8000 INCHES ZMRP = 373.0000 INCHES
SCALE = .0405 SCALE

PARAMETRIC DATA

ALPHA = 18.000 ELEVON = .000
AILRON = .000 RUDDER = .000
SPDRBK = 40.000

RUN NO. 32/0 RM/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	CD	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-19.960	.02120	.21320	-.04670	-.84800	-.02325	-.00310	.03120	.29700	.87200	.00000
.200	-15.000	.04480	.19800	-.02210	-.84480	-.03230	-.01020	.02970	.26500	.66100	.00000
.200	-9.940	.02040	.19500	-.00020	-.84330	-.03634	-.01340	.03120	.18500	.65200	.00000
.200	-2.510	.01230	.20270	-.01550	-.83670	-.03294	-.00230	.01100	.03900	.64500	.00000
.200	-.010	.01870	.19870	-.01690	-.84160	-.03662	-.00050	.00420	-.00600	.64400	.00000
.200	5.000	.01470	.19840	-.01660	-.83760	-.03769	.00270	-.01220	-.09000	.64400	.00000
.200	10.000	.02230	.19800	-.00120	-.84490	-.04029	.01180	-.03020	-.18800	.65200	.00000
.200	15.020	.04820	.19870	-.03040	-.86990	-.04705	.01100	-.03390	-.26800	.66500	.00000
.200	20.040	.02450	.21550	-.05420	-.85190	-.02414	-.00110	-.02730	-.30500	.67500	.00000
.200	GRADIENT	.00014	-.00050	.00012	-.00001	-.00052	.00063	-.00312	-.01712	-.00011	.00000

ERROR THERE IS NO AERO DATASET NAMED RFA033

ERROR THERE IS NO AERO DATASET NAMED RFA034

CA123 826C9 M86 M416E43V8R5TC6X9

(RFA036) (27 JAN 75)

REFERENCE DATA

MACH = 2499.8300 50.FT. XMRP = 1078.8000 INCHES
LREF = 474.8100 INCHES YMRP = .0000 INCHES
BREF = 938.8000 INCHES ZMRP = 373.0000 INCHES
SCALE = .0405 SCALE

PARAMETRIC DATA

BETA = .000 ELEVON = .000
AILRON = .000 RUDDER = .000
SPDRBK = 40.000

RUN NO. 36/0 RM/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

MACH	ALPHA	CL	CD	CLM	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-8.040	-.11000	.09810	.00830	-.11290	.08817	-.00180	.00180	.00300	.87200	.00000
.200	.000	-.02170	.06470	.01230	-.02170	.06474	-.00160	.00240	.00000	.86000	.00000
.200	8.010	.08910	.08340	.01830	.07130	.06099	-.00050	.00390	-.00400	.55700	.00000
.200	4.040	.16050	.08840	.02460	.16430	.05493	-.00300	.00590	.00000	.59800	.00000
.200	8.090	.26210	.07170	.02920	.26020	.04354	-.00300	.00940	.00000	.61700	.00000
.200	8.140	.36310	.08140	.02830	.37100	.02917	-.00170	.00400	-.00100	.62400	.00000
.200	10.180	.47030	.09440	.02870	.47980	.00996	-.00140	.00370	-.00100	.63000	.00000
.200	12.810	.56440	.11700	.02500	.59590	-.00924	-.00070	.00310	-.00200	.63600	.00000
.200	14.250	.71160	.15280	.01750	.72740	-.02710	-.00120	.00160	-.00100	.64300	.00000
.200	16.280	.82400	.20250	.01150	.84760	-.03666	.00000	.00320	-.00100	.64700	.00000
.200	18.330	.92250	.27930	.00200	.96360	-.02612	.00150	.00510	-.00500	.65100	.00000
.200	GRADIENT	.04491	-.00046	.00301	.04560	-.00170	-.00011	.00071	-.00064	-.02610	.00000

DATE 28 JAN 75 TABULATED SOURCE DATA - 0A123

(RFAD37) (27 JAN 75)

0A123 B26C9 M16 W18E43W8R5TC6X9

REFERENCE DATA

SREF = 2809.8300 36. FT. XREF = 1076.6000 INCHES
LREF = 474.8100 INCHES YREF = .0000 INCHES
BREF = 938.6000 INCHES ZREF = 375.0000 INCHES
SCALE = .0403 SCALE

PARAMETRIC DATA

ALPHA = .000 ELEVON = .000
AILRON = .000 RUDDER = .000
SPDRK = 40.000

RUN NO. 37/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

WACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-20.010	.02270	-.01190	.04940	.02270	.04944	-.01210	-.00100	.31100	.84500	.00000
.200	-19.030	.02760	-.00860	.03980	.02760	.03984	-.01310	-.01260	.25000	.74500	.00000
.200	-10.010	.01190	-.00840	.03400	.01190	.03406	-.01560	.01460	.17700	.65200	.00000
.200	-9.020	-.00460	.00210	.06440	-.00450	.06441	-.00540	.01220	.07600	.81500	.00000
.200	-2.500	-.01540	.00790	.06380	-.01540	.06389	-.00230	.00630	.03600	.84200	.00000
.200	-.010	-.01600	.01110	.06570	-.01600	.06575	-.00270	.00370	.00100	.87900	.00000
.200	2.470	-.01480	.01050	.06570	-.01470	.06572	-.00230	.00040	-.07900	.91400	.00000
.200	5.000	-.00960	.00500	.06310	-.00960	.06317	.00040	-.00240	-.07900	.97800	.00000
.200	9.990	.02170	-.00750	.05330	.02170	.05334	.01110	-.00760	-.17400	.77900	.00000
.200	15.000	.03370	-.01670	.04580	.03370	.04583	.01160	-.00710	-.24600	.83400	.00000
.200	20.020	.03690	-.02660	.04650	.03700	.04651	.00830	.00860	-.32300	.91800	.00000
GRADIENT	-.00004	-.00003	.00034	-.00003	-.00004	-.00003	.00046	-.00140	-.01528	.01608	.00000

(RFAD38) (27 JAN 75)

0A123 B26C9 M16 W18E43W8R5TC6X9

REFERENCE DATA

SREF = 2809.8300 36. FT. XREF = 1076.6000 INCHES
LREF = 474.8100 INCHES YREF = .0000 INCHES
BREF = 938.6000 INCHES ZREF = 375.0000 INCHES
SCALE = .0403 SCALE

PARAMETRIC DATA

ALPHA = 4.000 ELEVON = .000
AILRON = .000 RUDDER = .000
SPDRK = 40.000

RUN NO. 38/ 0 RN/L = 1.85 GRADIENT INTERVAL = -6.00/ 6.00

WACH	BETA	CL	CLM	CDF	CN	CAF	CYN	CBL	CY	XCP/L	CAB
.200	-20.000	.20360	-.00470	.04360	.20360	.02914	-.00910	.00660	.31700	.64500	.00000
.200	-19.020	.21820	-.00110	.04000	.21850	.02462	-.01730	.01470	.26300	.65400	.00000
.200	-10.000	.19350	.00740	.06200	.19740	.04814	-.01050	.01720	.16600	.63800	.00000
.200	-9.000	.18820	.02380	.06530	.16540	.05378	-.00440	.00760	.06100	.63000	.00000
.200	-2.510	.17160	.01700	.06410	.17590	.05183	-.00250	.00750	.03400	.61600	.00000
.200	-.010	.16370	.02270	.06730	.17000	.05545	-.00210	.00320	-.00500	.60200	.00000
.200	2.490	.17430	.01970	.06540	.17950	.05294	-.00210	.00320	-.04300	.61100	.00000
.200	4.990	.18440	.01460	.06190	.18840	.04875	.00260	-.00130	-.09000	.62300	.00000
.200	10.010	.19430	.00760	.05760	.20390	.04345	.00900	-.01020	-.17200	.63900	.00000
.200	15.010	.22190	-.01080	.04790	.22470	.03171	.01150	-.01270	-.24600	.66900	.00000
.200	20.010	.22000	-.02150	.05620	.22350	.04055	.00660	-.00230	-.31600	.66700	.00000
GRADIENT	.00196	-.00022	-.00056	-.00002	.00195	-.00036	.00052	-.00089	-.01677	.00164	.00000

04123 020C9 M06 W010E43V085TC6X9

(RFA036) (27 JAN 75)

REFERENCE DATA

MACH = 2000.0300 50.FT. MWP = 1076.0000 INCHES
 LREF = 474.0100 INCHES YMRP = .0000 INCHES
 BRFP = 938.0000 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

RUN NO. 39/0 RN/L = 1.05 GRADIENT INTERVAL = -8.00/ 6.00

PARAMETRIC DATA

ALPHA = 9.000 ELEVON = .000
 AIRLON = .000 RUDDER = .000
 SPDRK = 40.000

MACH	BETA	CL	CLM	CLN	CAF	CYN	CBL	CY	KCP/L	CAS
.200	-20.010	.30180	-.00800	.39070	.03463	-.01180	.01700	.29500	.85700	.00000
.200	-15.020	.41430	-.00350	.41900	.00336	-.01460	.02100	.25700	.84900	.00000
.200	-10.010	.37690	.01810	.36570	.02072	-.01260	.01770	.17700	.63400	.00000
.200	-5.020	.37540	.02040	.38310	.02721	-.00340	.00990	.07700	.63200	.00000
.200	-2.510	.36500	.01610	.39250	.02455	-.00250	.00710	.03900	.63700	.00000
.200	-.010	.36950	.02660	.37750	.02922	-.00280	.00390	.00000	.62600	.00000
.200	2.470	.37260	.02410	.38030	.02595	-.00290	.00110	-.04000	.62800	.00000
.200	5.010	.37670	.02090	.38380	.02235	-.00440	-.00500	-.08500	.63200	.00000
.200	10.010	.39510	.01310	.40120	.01424	.01170	-.01420	-.18100	.64000	.00000
.200	15.010	.41620	-.00620	.42360	.00970	.01170	-.01820	-.25000	.65700	.00000
.200	20.020	.39680	-.00740	.40420	.02362	.00590	-.01430	-.30600	.65600	.00000
GRADIENT		-.00036	-.00240	-.00036	-.00034	-.00029	-.00136	-.01606	-.00036	.00000

REFERENCE DATA

MACH = 2000.0300 50.FT. MWP = 1076.0000 INCHES
 LREF = 474.0100 INCHES YMRP = .0000 INCHES
 BRFP = 938.0000 INCHES ZMRP = 375.0000 INCHES
 SCALE = .0405 SCALE

04123 020C9 M06 W010E43V085TC6X9

(RFA040) (27 JAN 75)

RUN NO. 40/0 RN/L = 1.05 GRADIENT INTERVAL = -6.00/ 6.00

PARAMETRIC DATA

ALPHA = 12.000 ELEVON = .000
 AIRLON = .000 RUDDER = .000
 SPDRK = 40.000

MACH	BETA	CL	CLM	CLN	CAF	CYN	CBL	CY	KCP/L	CAS
.200	-20.010	.50270	-.00420	.59930	.01491	-.01030	.02660	.28700	.65400	.00000
.200	-15.000	.61530	.00730	.62430	-.02440	-.01850	.02590	.27300	.64700	.00000
.200	-10.000	.60930	.01010	.60200	-.01457	-.01310	.02430	.17500	.64600	.00000
.200	-5.020	.59080	.02510	.60250	-.00792	-.00590	.01230	.07900	.63600	.00000
.200	-2.500	.60370	.01670	.61590	-.01086	-.00690	.00630	.04800	.64200	.00000
.200	.000	.59310	.02450	.60490	-.00869	-.00140	.00260	-.00200	.63700	.00000
.200	2.490	.59850	.01990	.60970	-.01205	.00080	-.00120	-.04600	.64000	.00000
.200	5.010	.59340	.02320	.60410	-.01391	.00210	-.00660	-.08500	.63800	.00000
.200	10.010	.61130	.00990	.62170	-.01807	.00960	-.02040	-.17600	.64600	.00000
.200	15.030	.61990	-.00060	.62990	-.02003	.01330	-.02710	-.26000	.65200	.00000
.200	20.020	.59720	-.00630	.60270	.00924	.00120	-.02160	-.29200	.65600	.00000
GRADIENT		.00002	-.00053	-.00002	-.00053	.00093	-.00181	-.01676	.00008	.00000

DATE 20 JAN 75

TABULATED SOURCE DATA - 0A123

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0A123 826C9 M06 M16E3V0R3TC6X9

IRFAD41) (27 JAN 75)

REFERENCE DATA

0A123 = 2000.0000 50.0000 INCHES
0A123 = 474.8100 INCHES
0A123 = 938.0000 INCHES
SCALE = .0405 SCALE

0A123 = 1076.0000 INCHES
0A123 = .0000 INCHES
0A123 = 375.0000 INCHES

PARAMETRIC DATA

ALPHA = 16.0000 ELEWON = .000
ATLON = .000 RUDDER = .000
SPDRK = 40.000

RUN NO. 41/0 RIN/L = 1.05 GRADIENT INTERVAL = -6.00/ 6.00

MACH	BETA	CL	COF	CLM	CN	CAF	CYN	CBL	CY	KCP/L	CAB
.200	-19.990	.78470	.22450	-.01080	.81820	-.00437	-.00350	.03150	.28100	.65700	.00000
.200	-14.990	.83680	.19860	-.00700	.85840	-.04598	-.01300	.03150	.26200	.65900	.00000
.200	-9.990	.82020	.20650	.00340	.84520	-.03181	-.01040	.03150	.17300	.64900	.00000
.200	-5.020	.81800	.21110	.01200	.84440	-.02678	-.00650	.01970	.08700	.64800	.00000
.200	-2.300	.82420	.21210	.00910	.85060	-.02765	-.00130	.01200	.03700	.64800	.00000
.200	.000	.83070	.20530	.01210	.85490	-.03587	-.00040	.00400	-.00300	.64600	.00000
.200	2.480	.82880	.20240	.01490	.85230	-.03623	.00060	-.00300	-.04300	.64500	.00000
.200	5.010	.81810	.20590	.01840	.84300	-.03175	-.00050	-.01280	-.07800	.64400	.00000
.200	10.010	.81870	.20520	.00400	.84340	-.03266	.00620	-.03010	-.17000	.65000	.00000
.200	15.050	.83920	.20280	-.01610	.86240	-.04079	.00370	-.03290	-.24400	.65900	.00000
.200	20.030	.79790	.22060	-.01800	.82780	-.01195	-.00460	-.02640	-.28800	.66000	.00000
GRADIENT	.00019	.00019	-.00080	.00074	-.00004	-.00082	.00056	-.00320	-.01637	-.00028	.00000